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N. S. DAVIS, M.D.

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

VOL. XI. OCTOBER, 1870. NO. 10.

Original Contributions.

ARTICLE XXX.

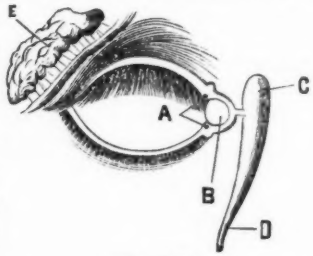
OLD AND NEW METHODS OF TREATING LACHRYMAL OBSTRUCTIONS.

BY H. W. BOYD, M.D., Prof. of Anatomy, Chicago Medical College.

The lachrymal apparatus consists of the lachrymal gland, which is the source of the lachrymal fluid, and the canaliculi, lachrymal sac, and nasal duct, or the passages which conduct the tears from the eye to the nose. The lachrymal gland is situated in the lachrymal fossa, a depression in the orbital plate of the frontal bone; its ducts are from six to twelve in number, each about the size of a hair. They open into the sac of the conjunctiva, at the outer upper-third of the orbit. The canaliculi are canals, about three or four lines in length, and less than one-third of a line in calibre. It consists of a fine, pale, hard, mucous membrane, containing a few mucous glands and pavement epithelium. They begin near the inner extremity of each lid, at the small prominence near the caruncle. The commencement of a canaliculus is called the punctum. From this point they pass along, near the margin of the lid, the lower one passing upwards and inwards, and the upper one downwards and inwards, until they unite and open by one orifice into the lachrymal sac. Their course, in health, is free, opening into the sac without valves.

The tears consist of "pure water, mixed with a small amount of salt and albumen."

The constant motion of the lids in winking causes the tears to be equally distributed over the convexity of the globe, and thus serves to lubricate the anterior surface of the organ, as well as to wash away foreign substances, such as particles of dust, from the cornea; and, owing to the peculiar arrangement of the parts, the tears naturally flow towards the inner canthus, and are forced by the lids through the contraction of the orbicularis muscle, through the puncta into the canaliculi, and on into the lachrymal sac, thence through the nasal duct into the nose.



(Fig. 1.)*

Now, it is evident, that any obstruction of the canaliculi, or nasal duct, must interfere with the passage of the tears, and, as they are continually being secreted by the lachrymal gland, they will collect in the sac of the conjunctiva, and, finding no outlet, will fall over the lid and run down the cheek, or, by collecting in the eye, will very greatly interfere with vision. Besides this watery condition of the eye, there will be dryness of the nostril, from the absence of the tears. These obstructions may exist either in the canaliculi or nasal duct; they are caused by deposits of lymph, cicatrices, inflammation, redundancy of mucous membrane, etc. Many methods have been devised, at different times, for the cure of these obstructions, and, even to-day, the plans of treatment differ very materially with different surgeons. In inflammation of the lachrymal sac, it was the practice of the older surgeons to lay open the entire sac by an incision through the external integuments, or to destroy it with the hot iron or escharotics; but this practice is now almost obsolete, having been superseded by improved methods of treatment; and it is a question with the most learned ophthalmologists whether it is ever necessary or advisable, in the

* Lachrymal Apparatus.—A. Punctua lachrymalia. B. Canaliculi. C. Lachrymal sac. D. Nasal duct. E. Lachrymal gland, showing its ducts.

present light of science, to lay open the lachrymal sac by external incision, or to destroy it by escharotics, as was practiced a few years since, either in inflammation of the sac or stricture of the nasal duct. It is believed that we are now acquainted with methods of treatment, to which the most obstinate cases of stricture of the nasal duct, or chronic inflammation of the sac must, in the course of time, succumb. In abscess of the lachrymal sac, the pus should be evacuated through the canaliculi, either by slight pressure upon the sac with the thumb or finger, or, if it cannot be accomplished in this way, a small-grooved probe should be introduced through the punctum and canaliculus into the sac, and, by slight pressure, the pus will escape through the groove in the probe; or, if this does not give it vent with sufficient freedom, then the punctum may be slit up, for a short distance, either with a pair of fine scissors, or it may be slit up in the small-grooved probe with a small, sharp knife;—as a rule, it will be sufficient simply to introduce the probe or small-grooved director. Strictures of the nasal duct were formerly treated by means of styles made of silver or lead, and introduced into the duct by means of an external opening through the integument.

These styles were introduced by means of a slender, double-edged knife, with a groove on one side of the blade. This knife was introduced through the external integument, near the inner canthus of the lids, into the opening of the nasal duct. The style is then introduced and forced through the opening, guided by the groove in the blade of the knife, until the lower extremity of the style rests upon the floor of the nostril; the knife is then withdrawn, and the style, which has a head or hook at its upper extremity, is permitted to remain, and the tears would escape through the duct, by the side of the style. A method, devised by Dupeytren, was to introduce a silver tube, and thus procure an outlet for the tears. This tube was designed to be permanent; an external incision was made, the tube arranged in position to conduct the tears into the nose, and the opening allowed to heal up. Cases are reported, in which these tubes remained in position for years, but, as a rule, they soon become displaced. They would either slip up or

down, or get out of position in some way, or would cause such irritation and pain as to necessitate their removal. A modification of this plan was made use of by Mr. Walthen, an English surgeon, in which the design was to prevent displacement of the tube. This plan consisted in having a tube with a neck and nail-head, having a small apperture at the upper extremity of the tube, through which the tears passed, and was to rest through a permanent fistula in the side of the sac. The tube was held in position by its head, which was always visible near the inner angle of eye.

(Fig. 2.)*

These plans, although extensively practiced, a few years since, have given place to more improved methods. Scarpa, an Italian, and Beer, a German surgeon, employed catgut for dilating strictures of the lachrymal duct; it was introduced through a fistulous opening in the side of the sac, and the end allowed to rest on the floor of the nostril, while the other end was fastened to the face by adhesive plaster. The portion in the duct, by absorbing the fluids of the sac, which would cause it to expand; each day the portion in the duct would be drawn through and cut off, a new piece taking the place of the old one. This method, like the preceeding one, is now obsolete.

In the early part of the last century, Anel, a surgeon of Turin, practiced dilatation of the puncta and canaliculi with a small probe, not larger than a bristle. He also devised a syringe, with a fine-pointed nozzle, to inject fluids through the puncta and canaliculi, into the lachrymal sac, and, by the force thus employed, to remove any obstruction of the nasal duct, or treat any disease of the lachrymal sac. This method of treatment, although practiced for a long time, was not satisfactory. There were many cases of stricture of the nasal duct, which the force from the syringe was insufficient to remove, and the fluid injected through the lower punctum would escape through the upper one. The objection to the probe, devised by Anel, was that it was too small and delicate to be of much service, and is,

* Dupeytren's and Walthen's tubes.

by some, regarded as dangerous to use. In certain cases, the syringe may be conveniently employed to inject the sac.

About the year 1820, Mr. Travers, a London surgeon, advocated the practice of dilating the natural passage by probes of silver-wire. This was first suggested to Mr. Travers by the strong analogy existing between the nasal duct and the urethra, and seeing the principle of dilatation practiced so successfully in strictures of the urethra. He says: "This applies to treatment of the urethra, as well as to the ductus nasalis, and it is only in cases of abscess, in which the distended and inflamed integuments threaten to give way by ulceration, that in either case it becomes necessary to deviate from it." The probes used by Mr. Travers were about five inches long, varying in size, flattened at one end, and slightly bulbous at the point. "The probe is introduced with perfect facility (by one who has an accurate knowledge of the parts) from either the upper or lower puncta lachrymalia, into the corresponding nostril, when no obstruction is offered to its passage; when the puncta is constricted, it is readily entered and dilated by a common pin, and, upon withdrawing it, by one of the smaller probes." He continues: "I have seldom met with a stricture so firm as not to yield to the full-sized probe. I am fully aware of the objection that immediately presents itself, *viz.:* that a passage so obtained is not permanent; but, by several repetitions of the operation, it is often rendered so." If, after a few days' trial, the treatment was not effectual in removing the obstruction, he would then introduce a nail-headed style, shaped to the course of the canal. This may remain in the duct for a period of twenty-four hours, after which the sac is syringed with tepid water by means of Anel's syringe. The part is then permitted to rest for twenty-four hours, after which this operation is repeated, and this plan is persisted in until the obstruction is completely overcome.

The plan devised by Mr. Travers has been practiced, with slight modifications, by an eminent surgeon of Philadelphia, Dr. Isaac Hayes, who gives the following strong testimony of its merits: "We have now employed this mode of treating

obstructions of the lachrymal passages for more than twenty years, in a very large number of cases, with the most gratifying success. We are persuaded that it is the most rational and least painful mode of treatment, effecting a permanent cure, and leaving no unsightly scar, as in the case where the sac is opened, and a style or tube inserted."

(Fig. 3.)*

The probes used by Dr. Hayes differ slightly from those devised by Mr. Travers. They were not bulbous at the extremity, but small and rounded, and in size from No. 17 down to No. 21, wire guage.

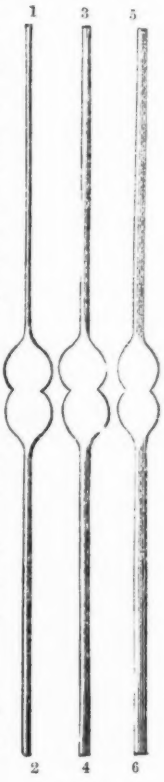
The probe is always introduced through the lower punctum. When the punctum and duct are occluded, Dr. Hayes commences treatment by using Anel's probe, which is longer than his own, and is more conveniently manipulated. After this he commences with a No. 21, or the smallest size of his own probes, and gradually increases up to the largest, No. 17. The ner of inserting this probe is described by Dr. Hayes as follows: "The lower lid is to be drawn tense, with the left thumb applied at the outer angle of the eye, and the patient directed to look upwards. The lower punctum is thus exposed, and placed in the best position for the introduction of the probe. This instrument is then to be introduced perpendicularly to the edge of the lower lid, into the punctum, and, by a little pressure, pushed as far as the commencement of the lachrymal canal. The direction is then to be changed to a nearly horizontal position, so as to correspond to the direction of the lachrymal canal. The point being a little upwards and backwards, by gentle pressure in this direction, the probe may be pushed in, until its point passes into the sac and presses against the bone. The direction of the probe is then once more to be changed nearly to a perpendicular, and the probe to be gently pushed

* Dr. Hayes' probes for dilating the lachrymal canal, *via* the lower puncta.

down, until the stricture is passed, and the probe rests upon the floor of the nostril. No violence should be used, if it is, the membrane will be torn and injury inflicted." But if it cannot be introduced with very moderate pressure, he advises to abandon the attempt for a few days, until the irritation subsides, and then attempt it again. When you have succeeded in once introducing the probe, it is allowed to remain for "one, two, three, or even twelve hours," if it is found not to produce much irritation. He says it is rarely necessary or advisable to let it remain for a longer period than this. When the probe is withdrawn, the canal is washed out with cold water, by means of Anel's syringe. "After an interval of four, five, or eight days, to allow the tenderness to disappear, the same probe, or, if practicable, one a size larger, may be introduced. This process is to be repeated at intervals, the size of the probe being increased whenever it is practicable, until the passage has been dilated to its full extent. When this has been accomplished, it may be well to introduce the large probe a few times, at distant intervals, and inject cold water through the punctum, by means of Anel's syringe."

In the year 1851, Mr. Bowman, an English surgeon, published an account of a new operation for Epiphora, when there was eversion of the punctum. The operation consisted in slitting up the punctum and canaliculus as far as the caruncle. This operation proved so successful that it soon came into general favor. And in 1855, the same operation of slitting up the punctum and canaliculus, was practiced by Mr. Bowman, as a means of assisting in exploring the lachrymal canal, and removing obstructions from any portion of the passages. This method is now in more general use than any other, for the treatment of lachrymal obstructions. It consists in slitting up one canaliculus, generally the lower one, as far as the caruncle, and repeatedly probing the nasal duct with variously sized silver probes, of regularly increasing diameters. The probes consist of six sizes, from the smallest to the 1-20th of an inch. These probes are made of silver, or of hard rubber, which has the advantage of being more flexible than the silver, and is preferred by some

on this account. They are arranged so that two sizes may be blended in one probe, one end of one size, and the opposite extremity of the next size. The punctum and canaliculus are slit open by means of fine scissors, or a small grooved director and sharp knife. There is in use, also, a small probe-pointed knife with a curved blade, which is well adapted for the purpose. The probe point of the knife is introduced into the punctum, and pushed on into the canaliculus, and the handle of the knife raised from a horizontal to a nearly perpendicular position, and as the handle is raised, the blade slits up the punctum and as much of the canaliculus as may be required, even into the sac, if necessary, which is seldom the case.



(Fig. 4.)*

The scissors spoken of, for this purpose, are also exceedingly convenient, from the fact that they enable us to regulate and limit the length of the incision. They consist of a pair of fine straight scissors, with one blade projected about one-twelfth of an inch, into a fine probe point, and the other blade not quite so long, and terminating obtusely. These scissors were devised by Dr. John Green, a distinguished ophthalmologist of St. Louis, Missouri.

After the slitting of the caruncle has been accomplished, which is neither difficult nor painful, a probe should be introduced into the canal, and gently pushed forwards, and should it come in contact with a stricture, or an obstruction of some kind, by proper care in manipulating, with one of the small sized probes, the obstruction may be passed, after which a size larger probe may be used, and so continuing to increase the size of the probe, until the canal will admit the largest sized probe throughout its entire length.

According to Mr. Bowman, in about one out of every four

* Bowman's probes for dilating, with division of lower punctum.

cases, a stricture or obstruction of some kind exists in the canaliculi, its most usual location being near the sac, but occasionally near the middle of the canaliculus. Should it exist in either of these localities, one of the smallest sized probes should be introduced, and, by care and skill, the obstruction may be passed; if it should prove to be obstinate, then slight force may be used; if, after thorough trial, it should turn out to be imperious, then it may be perforated by Mr. Bowman's guarded knife, or his canula lancet, instruments devised by Mr. Bowman expressly for this purpose. When the probe passes with perfect freedom through the canaliculus, then the larger sized probes may be passed down, and the nasal duct explored; and, if a stricture exists in the course of the sac, or nasal duct, it may be treated by the same method of gradually increasing the sizes of the probes. The canaliculus being a much smaller canal than the nasal duct, it is believed by some to be impossible to dilate a stricture of the nasal duct, through the canaliculi; so they originated the plan of slitting the canaliculus up throughout its entire extent to where it opens into the sac, thus converting it into a groove. By this means the surgeon is enabled to pass the largest sized probes or styles without spending much time, or exercising a great deal of skill. This operation frequently involves the total obliteration of the canal, and hence, as Dr. Green has said, it constitutes a mutilation, and should not be resorted to except for good and sufficient reasons. When this is done, the upper canaliculus is the one usually chosen for the operation; and it is fortunate that such is the case, as the upper one can more easily be sacrificed than the lower one.

(Fig. 5.)*

Dr. E. Williams, of Cincinnati, treats obstructions of the nasal duct by means of styles, of large graduated sizes, introduced through the upper canaliculus, by means of a free incision. The largest of these styles are one-eighth of an inch in diameter, and are worn for a period of from six weeks to three

* Dr. Williams' styles for dilating *via* the upper canaliculus, with free incision of punctum and canaliculus.

months. They are taken out every day, and the sac injected with a solution of sulphate of copper or zinc.

My friend, Dr. John Green, of St. Louis, Missouri, to whom I am in debt for much that is in this paper, has proposed a modification of Dr. Williams' treatment, by substituting the softest, most pliable lead wire, for the rigid silver styles of Dr. Williams. Dr. Green claims that the lead, being soft and pliable, adapts itself to the anatomical peculiarities of the parts: the nasal duct not being perfectly straight, but irregularly curved, or at least variable and uncertain in direction, and, hence, it is often difficult to pass a large and stiff probe; or, if passed entirely through the canal to the floor of the nostril, the pain it causes from unequal pressure being too rigid to adapt itself to all the irregularities, soon causes its removal. But the leaden style fulfills all the indications not accomplished by the silver ones:

First, it is easily introduced, and readily adapts itself to all the irregularities with comparatively little pain, and hence can be worn for a much longer period without removal. The smaller size can be more readily exchanged for the larger—than is the case with the silver ones, thus shortening the period of treatment. Experience has also shown that less dilatation is required by this method than by that in which the silver styles are used, and the injection of medicated fluids into the sac may also be dispensed with. In the use of the silver styles, the lachrymal passage is changed to conform to the style, while in the use of the leaden ones, the style adapts itself to the shape of the canal; and, frequently, when they are withdrawn, they are curved, showing the shape and course of the duct, varying in different cases, but retaining a uniformity in the various stages of treatment of the same case. At first, Dr. Green experienced difficulty in introducing the smallest sizes of these leaden styles, on account of their extreme flexibility. This led him to devise the plan of making them tubular, and having a a steel or silver stilet to fit into them. They are then rendered rigid, which facilitates their introduction—which, when accomplished, the stilet is withdrawn; and the style, remaining in

place, soon adapts itself to the shape of the canal. Dr. Green uses seven sizes of these styles, numbering from No. 14 to No. 20, of the wire guage. He claims that in certain obstinate cases, where Mr. Bowman's method is not exactly suitable, because no permanent result follows the successive introduction of the probe, the stricture returns as soon as the probe is withdrawn; in cases of this class, a large sized leaden style, worn for a few days, will generally give a free passage, or, in other words, the effect on the stricture is more permanent than by the silver probes. It also accomplishes the end in view without interfering with the normal condition of the parts, much more perfectly, and in quicker time, than by the silver styles of Dr. Williams.

We have now alluded to all the principal methods of treating lachrymal obstructions. The old method of laying open the sac, is now almost obsolete, as is also the method of puncturing the integuments, and introducing a silver tube, or nail-headed style, practiced by Dupeytren, Lubbock, and Mr. Ware. But the method of treatment by dilatation, is the one which holds ascendency over all others. Each of its modifications is possessed by its own peculiar merits, and each one has advantages over the others, in certain classes of cases; and no one of them should be practiced to the exclusion of the others. But the principal of continued dilatation through the natural passage, as first practiced by Dr. Travers, and Dr. Hayes, and subsequently modified by Dr. Bowman, and others, is the best plan with which we are acquainted, for treating lachrymal obstruction, and disease of the lachrymal sac. We should be prepared to use any one of its modifications, whenever a case requiring either of these modifications presents itself. The plan which will apply to the largest number of cases, and leave them in the condition nearest resembling nature when the treatment is terminated, should be the one adopted, all things being equal. The plan of Mr. Bowman is probably more in general use than all the others put together, because it fulfills the indications in the greatest number of cases, and, all things considered, leaves the parts in a more normal condition than any other. But

here are exceptional cases, in which simply slitting up the punctum, and probing according to his plan, will not suffice. The stricture returns almost as soon as the probe is withdrawn. In such cases a style, worn for several days, will be found beneficial; and we are inclined strongly to the opinion that the flexible, leaden style, as used by Dr. Green, is the one best calculated to do good in these cases. We are now using the leaden styles, as recommended by him, and in the few cases in which we have thus far made use of them, our success has been most gratifying. We have never yet used the styles recommended by Dr. Williams, for the reason that we have always practiced Bowman's method of slitting up the lower punctum, and dilating the passages with the series of probes recommended by him. Then, too, we were taught in our pupilage to believe that slitting up the canaliculi into the sac, was taking too free liberties with the parts, and was dangerous to the functions of the canaliculi, and should be practiced only in exceptional cases, and also that the use of very large styles, similar to the largest of his, was dangerous to the membranous lining of the nasal duct, from the long continued pressure of the mucous membrane against the firm, bony walls of the duct. For the same reason, we have never made use of the probes made from *laminaria digitata*, used for any obstinate strictures, the principle of which is similar to that of a sponge tent in the cervix uteri: it absorbs the fluids and swells up, causing rapid dilitation; and more, when this is removed from the passage, there is danger of its tearing, or, at least, loosening the mucous membrane from the bone which forms the wall of the nasal duct.

As regards probing the superior or inferior canaliculi, it matters but little which one is selected. A very good plan is to practice on both, as was the custom of Mr. Travers; first one, and then the other.

We have been accustomed to using the lower one, but can see no reason why it should be selected in preference to the upper, except as a matter of convenience, or where the inferior one is impassable from adhesions. It is a little more difficult to get at the superior one, especially where the eye is not very promi-

nent; neither is it easy to stretch the canaliculus in the proper direction, in order to slit it, as with the lower one.

In conclusion, we would simply remark that, all things considered, the system of Mr. Bowman presents advantages over all others. The interference of the natural conditions of the parts is so slight, and the results on the whole so perfect, and the pain and inconvenience of the patient so trivial, and the time occupied in the treatment probably as short as in any other, that by far the large majority of cases may be easily and permanently cured.

ARTICLE XXXI.

REPORT ON OTOLOGY.

BY SAMUEL J. JONES, A.M., M.D., Chairman.

The advance made in the last quarter of a century in the different branches of the profession of medicine, has given increased interest to those engaged in its pursuit.

To achieve this result, Science in general, has done much. New and improved instruments for diagnosis assisted in making visible, conditions which reasoning could only render probable, before the discovery of such apparatus.

The Stethoscope enabled the physician to explore a region, though hidden from view, with results almost as accurate as vision could have revealed. The Ophthalmoscope cleared away the mist that veiled diseases of the interior of the eye. The Laryngoscope, the Rhinoscope, and the Otoscope, have achieved results eminently satisfactory. The Endoscope, the Sphygmagraph, and others have aided in physical research. Although undue enthusiasm, may have claimed for these, a degree of importance that experience scarcely justifies, yet they have their use, and it should be the aim of the profession, instead of condemning them for their insufficiency, to endeavor by honest effort, to widen the sphere of their usefulness, and to so improve them as to increase the amount of good they are capable of achieving.

The advantages which resulted from the discovery of the Ophthalmoscope are recognized by all. What before, had been mysterious, began to become clear. A new interest attached to the study of diseases of the eye. The number of workers in, and of works on Ophthalmology rapidly multiplied, and many a grateful sufferer to-day, returns reverent thanks for such result.

One other department of our profession, though of recognized importance, remained devoid of interest—neglected—and the afflicted continued to suffer. Diseases of the ear continued to be prominent as among the opprobria of our profession. They were shunned by its members as difficult and uninteresting in diagnosis. The results of treatment were unsatisfactory in a marked degree. The unfortunate sufferer from these affections must either be left to nature to repair the injury, as best she might, or he must fall a prey to the empiric. An occasional spasmodic effort was made, at intervals running through years, to do something to confine aural practice to the medical profession, but the results were scarcely such as had been hoped for. It would not be interesting—scarcely profitable—to dwell upon the feeble efforts made in this direction, before the time of Sir William Wilde, of Dublin, whose work resulted in more accurate diagnosis, and with whom we may fairly estimate the beginning of aural surgery. With this as the initiative, Mr. Toynbee, of London, engaged in the same pursuit, with such energy and such a degree of success, as made a new era in that department of Surgery. His investigations, and the results of them, went far towards establishing accurate diagnosis; narrowed the field of doubt and uncertainty that had enveloped those diseases, and excited an interest in them that is every day becoming more extended. His success made him conspicuous, and amidst his career of usefulness, he fell a victim of accident. His work so nobly begun, has been pursued by Hinton, Yearsley, Anderson, and others of his countrymen, who were enabled to profit by his work, and to add to the result. Great Britain did not remain the only country that sought to widen this field of study. Germany, with that patient research which char-

acterizes all her labors, betook herself anew to the work, and humanity may congratulate itself on the results attained by such men as Politzer, of Vienna, Gruber, of Vienna, Voltolini, of Breslau, Swartze, of Halle, Trötsch, of Würzburg, and Lucae, of Berlin — men whose lives are devoted to the investigation of these diseases, and their remedy.

Operative surgery of the eye seems to offer so much more attraction for the surgeon, that more who prefer special practice elect that; or, where diseases of the Eye and Ear are treated by the same person, diseases of the Ear, perhaps, receive a minor share of attention. This may be said of France and America, where Ophthalmology and Otology are more united than in either Great Britain or Germany.

In Paris, Löewenberg, in Boston, Clarke, in New York, Agnew, Roosa, Noyes, and Hackley, and in Chicago, Holmes and Hildreth have perhaps done as much as any others in their respective countries, to give aural surgery its proper degree of attention, and to show how much good may be done by faithful work in an unattractive and neglected, but important field of labor.

Having given a cursory view of workers in Otology, mention of a few of their most important works would seem to be proper; such as Sir William Wilde's "Aural Surgery;" "Diseases of the Ear," by Toynbee, with later edition of it by Hinton; "Trötsch on the Ear," translated by Roosa, and Politzer on the "Membrana Tympani," translated by Mathewson and Newton. Besides these works, there are published in Germany, the "Archiv für Ohrenheilkunde," a quarterly journal, and "Monadschrift für Ohrenheilkunde," a monthly, both devoted exclusively to diseases of the Ear; and in New York and Carlsruhe, simultaneously, the Archives of Ophthalmology and Otology, a quarterly, which constitutes the bulk of the authentic literature of that department at the present day.

In this connection it may be stated that two Otological Societies, one in the United States and the other in Germany, have been organized, to foster the science of Otology, which hold annual meetings.

And now as to the practical result of this work, the inquiry is quite pertinent, as to what has been gained in the treatment of diseases of the Ear. To this, it may confidently be replied, in general terms, much has been done. To be more explicit, however, it can be said that the progress made in diagnosis has been eminently satisfactory. One of the most conspicuous instances in which this is shown, is in that class of diseases formerly designated as nervous deafness, the counterpart of which was once amaurosis, in Ophthalmology. Each being a convenient term, which was to embrace all that we did not understand regarding impaired hearing. That one prominent symptom of aural diseases, tinnitus aurium, which was supposed to be in so many of the cases a primary affection, is now known to be in many instances, owing to diminution or closure of the eustachian tubes, whereby the air in the middle ear becomes rarified, and the greater pressure from the more dense air upon the exterior of the membrana tympani, presses it in, upon the ossicles, and by modifying the undulations of sound produces the confusion of it known as tinnitus.

Another important fact ascertained is, that simple rupture of the membrani tympani does not mean total and permanent destruction of the drum, as was supposed by many, even members of the profession; for it is now known that such ruptures, in nearly all cases, unite readily, in the same manner as an ordinary incised wound. Hence the drum may often be punctured by the Surgeon with advantage, during severe inflammation of the middle ear, as in cases of scarlatina, where too often from want of familiarity with this fact, and from omission to watch properly the effect upon the ear, during the progress of that disease, hearing is greatly impaired in many instances, if not lost. Life itself, may even be saved by timely puncture of the drum and evacuation of fluid accumulation resulting from acute inflammation, in the cavity of the middle ear; otherwise the thin plate of bone dividing it from the brain may yield, from pressure, before suppuration shall have sufficiently destroyed the drum to allow free exit, and thus afford relief.

The supplying of artificial membrani tympani, in case of per-

manent loss of the natural one, is a valuable step in reducing the disadvantages resulting from the absence of that important portion of the accoustic apparatus, and often adds astonishingly to the ability of the sufferer to hear again, in addition to giving more or less complete protection from external influences, to a cavity, that, in its normal condition, does not communicate exteriorly with the atmosphere.

Another of the gratifying results of successful treatment of impaired hearing is in the improvement which is manifested in those cases of dulness of intellect, which are often an accompaniment of diminished hearing power, and apparently a consequence of it.

Ottorrhœa, which is mainly but a consequence of some preceding structural change, instead of a primary disease, has so often baffled surgeons in their attempts to control it, as to have justified the grave prognosis so many make. The possible results of the causes of otorrhœa are such that British Life Assurance Companies have deemed affections of the ear, resulting in otorrhœa, as adequate cause to preclude persons so affected from the benefits of assurance. One of the chief difficulties in the treatment of these cases, where the otorrhœa has been accompanied by only partial destruction of the membrana tympani, has, to a great extent, been remedied by Gruber of Vienna, who availed himself of the fact, that, in swallowing, the soft palate closes up against the (posterior part of the) pharynx,—obliterating, for the time, the passage down from the posterior nares to the throat—and the orifices of the Eustachian tubes open. At the instant that these two conditions are produced, he forces fluid, medicated as occasion may require, by means of a syringe, with blunt nozzle, fitting the nostril, through the nose and Eustachian tube into the middle ear. During the performance of this, of course, the other nostril is kept closed by pressure. By this means he is able to remove the accumulations from a larger surface of the middle ear than can be done by forcing water through the external meatus, and the orifice in the membrana tympani, for, by the latter method it is difficult to remove, from the inner aspect of

the membrana tympani, the thickened and hardened secretions, and what is so attached is chiefly forced through the Eustachian into the throat, and is so offensive as to render it desirable to be avoided when possible. If violence be used in doing this, after Gruber's method, dizziness may be produced temporarily. To avoid anything of this kind, a syringe may be used with the Eustachian catheter, and nozzle properly adjusted to attach, thus to throw a direct stream through the Eustachian tube, with sufficient force to detach even moderately firmly adherent matter, and carry it out through the external meatus.

Investigation in this field of study was at first much impeded by the paucity of instruments and appliances suitable for its pursuit. Careful anatomical and physiological observation of the ear, enabled inventive genius to act intelligently, and soon the offspring of necessity became more numerous. Now we have apparatus for the exploration of the hidden mysteries of the ear, but little less efficient in revealing its interior than the opthalmascope is in the eye. Of these, Wild's Aural Speculum, designed to make straight the passage to the outer surface of the membrana tympani, and thus to show more plainly the appearance of that membrane, served its purpose well. Toynbee modified this somewhat, making the speculum conform more nearly, in its different parts, to the conformation of the auditory meatus. Other modifications of the same were made by others, but they have no marked advantage. All these were designed to be used with direct light, either natural or artificial, and to obviate certain inconveniences which attended their use, reflected light, after the manner of the light reflected from the mirror of the opthalmoscope, was introduced, which serves as a convenient mode of examination.

This speculum, used in connection with the mirror, might appropriately be called the simple otoscope.

A more efficient instrument, is what might, with less propriety, be called the compound otoscope, known by various names, as Clarke's, Anderson's, and others — each of whom claims to have added some improvement to it, making what is now a valuable instrument, constructed on much the same principle as

the endoscope—light, either natural or artificial, being concentrated on a mirror, set at such angle as to throw the reflection through a Toynbee's speculum on the membrana tympani, whilst the observer looks through a perforation of the reflecting mirror, and gets a view which is magnified by a convex lens attached exteriorly.

Another instrument of recognized value, though of more limited scope of usefulness, is Siegler's pneumatic speculum, designed "to aid in determining the presence of bands of adhesion in the tympanic cavity, by indicating any spots at which the outward movement of the membrane might be impeded" (Hinton). It is constructed somewhat as a Toynbee's speculum, with its outer and larger orifice closed, and the inner and smaller one fitting tightly into the meatus externus. Through an opening in its side, the air may be exhausted, whilst an observer watches the effect upon the membrane, through the glass with which the outer opening is closed.

Politzer's aural manometer is "adapted especially for physiological demonstration of the vibrations of the air in the middle ear, as well as to show the permeability of the Eustachian tube, the influence of the acts of swallowing and respiration upon the membrana tympani, etc." "It consists of a horse-shoe shaped glass tube, 1½ mm. in calibre, which is fastened in the auditory canal by means of a hard rubber nozzle smeared with grease. A drop of solution of carmine, contained in this aural manometer, indicates, by rising and falling, the variations in the pressure of the air in the auditory canal and cavity of the tympanum."

The aural douche, made as Thudichum's, or more appropriately, Weber's nasal douche, is a good substitute for the ordinary ear syringe, in inflamed and thinned conditions of the membrana tympani, and renders the dangers of perforation, by the stream, less.

Eustachian bougies, made of whalebone, are likewise serviceable in certain conditions of diminution of the calibre of the tube, and will be spoken of in connection with chronic catarrh of the middle ear. Wilde's polypus snare, and the polypus for-

ceps, are not without their use, as well as Voltolini's galvano-caustic in removing foreign growths from the meatus.

Other instruments, devised for local treatment of the ear, embrace Moas' apparatus for generating vapor of muriate of ammonia, to be thrown through a Eustachian catheter into the middle ear, in cases of chronic thickening; Politzer's apparatus for the air-douche, in cases of temporary obstruction of the Eustachian tube; and the compression pump, designed also for the same purpose, but of less practical value, are now, comparatively little used.

Of the instruments for diagnosis mentioned, most were designed for investigation through the external meatus, but there are others of greater or less value, that are used to investigate through the Eustachian tube, either alone or aided by other and supplemental parts. Of these, perhaps the most important is the Eustachian catheter, valuable for its diagnostic utility, and its service in therapeutic use. Toynbee's "Explorer," and the diagnostic tube, separately, and in connection with the Eustachian catheter, are of great service.

The ordinary tuning fork of musicians is used with advantage in diagnosis in those cases where impaired hearing is dependent upon obstructed Eustachian tubes.

Of the many diseases an aural surgeon is called upon to treat in a variable climate, like that of much of the territory of the United States, where there are so great and so sudden changes of temperature, and often great humidity, probably the most frequent, and certainly one very important one, is chronic cataract of the middle ear, with the ordinary results, which are so manifold. The primary effects of acute catarrh are comparatively unimportant, except in so far as a thickened condition results, of the mucous and submucous tissues, and the consequent diminution of the calibre of the Eustachian tube. The acute symptoms attract, as a rule, but little special attention, but gradually, we find the size of the tube narrowing. The secretions of the mucous membrane, lining the whole interior cavity, become thickened, hardened, and changed, as we find in the mucous membrane of the nares. Thus, free exit to

the fauces being precluded, the secretions are retained within the middle ear, in this altered and irritating condition, and thus effect and cause, act and react upon each other, until the whole membrane presents such thickened appearance, that in looking through the auditory meatus, the drum, instead of presenting its natural translucent appearance, appears opaque. The progress to this condition has generally been slow, almost unperceived, so gradual has it been. Perhaps but one ear is effected, or both may be, but the change from a condition of health has been so gradual, that the sufferer first becomes decidedly awakened to the altered condition, by his friends, who discover that he no longer hears so acutely, and, on closer observation, he finds that he is required to fix his attention more closely to discover the nicer distinction of sounds. He now finds that the occassional roaring noise that had been heard at times, occurs more frequently, and is so persistent that the simple act of swallowing will no longer relieve it, and air must be forced in with some energy, as by the Valsalvian method, before he obtains relief. We thus have the condition established, and the first effects apparent. As a consequence of the thickened condition of the drum, resulting from the additional thickness of the mucous membrane, and the adjacent tissues to which the inflammatory process had extended, it yields less readily to the undulations of sound. Perhaps the tube has become so much diminished in calibre, that with difficulty can air be forced in through it. As a consequence, the air in the cavity of the tympanum becomes rarified, and the drum becomes very concave inwards, and presses on the ossicles. Their natural free movement upon each other becomes impaired by this pressure, just as do the joints of the fingers, when the hand is encased in splints. The cartilage at the articulation with the fenestra, participates in the structural change which results from constant pressure, and absence of the natural movement. The bones, thus crowded together, become more firm, and form a more rapidly conducting medium for sound, and the supposed synchronous conduction of the sound through them, and through the atmosphere surrounding them, to the auditory nerve, is de-

stroyed, and we may in this way account for the confusion of sounds which are heard under these circumstances, if the theory be accepted, of the two undulations of sound meeting at the apex of the cochlea, in normal condition, and thus neutralizing each other, as in the meeting of opposing waves in water, in the normal condition of the ear.

The results of the chronic inflammatory process, although mainly manifested in the middle ear, are not limited to that space. It is well known, how rapidly inflammation extends along mucous membranes, and hence the lining of the mastoid cells are affected, and the orifices of the Eustachian tubes may participate in the structural change, as the rhinoscope often reveals to be the case.

We have now seen the progress of the disease — some of the structural alteration of the tissues, and some of the natural consequences of those changes. In addition to the destruction of the harmonious action of the whole, as an acoustic apparatus, we have the effect of the mechanical obstruction of bloodvessels, which, in addition to the impaired hearing, adds to the mental obtuseness we often see attending these cases.

Now that we see the physical changes in the auditory apparatus of the patient and realize the disadvantage to him, the most important question to him is, what can we do to remedy them?

In our profession, we all realize the primary importance of obtaining a correct knowledge of the pathological change with which we have to deal. In this respect, I am persuaded that progress has of late been made, which augurs favorably for more satisfactory treatment of these cases. It were desirable that a greater degree of success in treating them were in our command; but because we have in some cases to acknowledge that only experimental trial can determine how much can be done for them, it should not discourage us to such an extent as to preclude effort, in even those cases, for the number is far from small, where marked benefit is given, if only the patient will persevere in treatment. If we do occasionally fail to accomplish our object with certain of our cases, even after patient

effort, it is only the same result which attends many efforts in all the departments of medicine and surgery. Besides, the condition produced by this catarrhal inflammation does not remain stationary. If not treated, it continues to grow worse, and if we fail in our efforts at treatment to do more than stay progress of the disease, that is a result worth all the effort it costs, and is, in a degree, success.

How we must proceed to accomplish the result desired, circumstances must determine. The degree of structural change, the general health of the patient, the age, temperament, and other collateral considerations, will have a modifying influence. As in nasal catarrh, one important point is to get rid of the thick and altered mucous secretion which accumulates, from the orifices of the Eustachian tubes, through to the membrani tympani. For this purpose, I have found the steam atomizer, with a solution of chlorate of potassæ, or muriate of ammoniæ, effective—the salt in connection with warmth and moisture being serviceable. This however, presumes a degree of permeability of the Eustachian tubes. Where the calibre of them is so small as to require some force to propel air into them, by the introduction of the Eustachian catheter, and forcing of air in by means of a rubber inflator, the secretions may be loosened and even forced out by the return current. Politzer, of Vienna, seems to have been the first to have given practical recognition to the fact that in the act of swallowing, the soft palate closes up against the posterior wall of the pharynx, and at the same time the orifices of the Eustachian tubes open. Availing himself of this fact, he gives his patient a mouthful of water, and whilst in the act of swallowing it, an inflator which has been inserted into one nostril—the other being closed at the same time—pressure is made, and pure air is forced into the middle ear through the Eustachian tube, with great advantage in simple and recent cases. In other cases, requiring more decided impression by the forcing of iodized air in, by means of a Buttles' inflator, the requisite degree of stimulation may be obtained. To do this the nozzle of the inflator is inserted into one nostril, the other being closed, and the patient is made to swallow a mouthful

of water at the same time that pressure is made, which will accomplish the desired end; if not, attaching the inflator to a Eustachian catheter and pressing the bulb will nearly always force a stream of the medicated air in. However, if this fail, we have still another resource in the Eustachian bougie, which may be introduced through the Eustachian catheter, having been annointed or not, as occasion may seem to require.

Frequently the application of stimulating or astringent substances to the orifices of the Eustachian tubes, proves of advantage, as auxiliary treatment.

In a large proportion of cases, this local treatment seems to be all that is required. There are others, though, where constitutional impression is required in addition. Not unfrequently we find accompanying this affection a debilitated and relaxed condition of the system, which, of course, indicates tonics along with alteratives. Of these, I prefer the bi-chloride of mercury in diminutive doses, in solution with the compound tincture of cinchonia, though at times I find a stronger tonic than bark desirable.

A careful examination of the properly managed Turkish bath satisfies me that it may be used with advantage in these cases. The free perspiration produced by the air, heated to a high degree, encourages the skin to healthy action, and tends in no small degree to equalization of the circulation. As to the practical value of counter-irritation over the mastoid cells, professional opinion is divided. The weight of testimony seems, however, to favor its use in certain cases; but it seems to require persistent use to be of service, and is apparently most beneficial in those cases where the inflammation has extended to the mastoid cells.

ARTICLE XXXII.

REPORT ON THE USE OF PLASTER-PARIS IN FRACTURES.

By R. G. BOGUE, M.D., Surgeon to Cook County Hospital, Chicago.

PLASTER-PARIS IN FRACTURES.—The use of Plaster-Paris in surgery is not new. Its use in the treatment of fractures is not entirely of recent date. But its application in the manner recommended in this paper is not generally understood by the profession.

In presenting it to the notice of this Society, I do not bring it up as a new thing; nor as original with myself; but, having had my attention called to it, some three years since, and, having used it somewhat extensively during that time, and finding it to meet the requirements better than any thing else, is my excuse for calling the attention of the members of this Society to its use. Perhaps some use it already; if so, it needs no recommendation to them;—others may be induced to try it. I am sure that a more general knowledge of its use will establish it as a valuable addition to our means of treating fractures.

For a fuller and more detailed account of its use, we would refer to a paper, by Dr. James L. Little, of New York, in Vol. 18, of the Transactions American Medical Association; in fact, it was from this report that our attention was called to it. It came at a time when we had become weary in trying to treat fractures, of the leg especially, with the various appliances recommended; we could find none to fulfill the indications completely, nor even well, with comfort to the patient. But, with the Plaster-Paris, all the indications are met perfectly; so it seems to us. In our opinion, there is no style of dressing for fractures, in some localities, that can compare favorably with it.

It is cheap, light, readily applied, can be perfectly adapted to any-shaped limb, free from danger of producing injury to the skin by pressure, little or no danger of constricting or ligating the limb. From its perfect adaptation, it prevents much

swelling, allows movement of the patient or part without detriment to the limb or dressing, secures perfect immobility of the bones at the point of fracture, admits of sufficiently free examination of the limb without disturbing the dressing, is worn with entire comfort, and keeps the limb dry by absorbing all exhalations from the skin.

The dressing may be applied directly after an injury; and, from its uniform support, prevents œdema. And, there is no danger to be feared from this, nor from pressure upon salient points, for the dressing can be applied so that there will be no more pressure upon the very point than on all the parts about it. There is no particular point which bears more pressure than another; the compression is even and equable.

In the treatment of fractures, there are several indications to be fulfilled: the essential one is the retention of the fragments in co-aptation; and the dressing which accomplishes that, most certainly is the best. Then, if, in addition, there is combined safety to the soft parts, and comfort to the patient, we have the essentials necessary for a good dressing.

In most cases of fracture, if there is maintained complete extension of the limb, there will be co-aptation of the fragments; and, if the parts can be thus secured, and all motion at the point of injury prevented, there will be little, if any, pain, and the parts be in the most favorable condition for early union. Take, for example, a fractured leg, and wherein is this dressing better than any other? By its taking hold of the foot and ankle below and the head of the tibia above, there is abundant means for making extension and counter-extension; all of the salient points are grasped so evenly that there is no danger from pressure. Then, the limb is nearly surrounded by the splint in its whole length, and evenly supported by it. The dressing is hard, which, absolutely, prevents the lower part of the limb from being drawn toward the knee, preventing any displacement in that direction; and, while the foot and knee are held in relative position, and neither end of the limb capable of being moved without the other,—for the whole dressing and limb must move together and alike,—there can be no

motion of the fragments at the point of injury, thereby allowing any amount of moving of the limb and body that may be necessary, without detriment to the part.

It is the only dressing which will bear, with any certainty, the rough usage in cases of delirium, which is not uncommon after fractures in the dissipated. With this, there is but little danger of injuring the limb. We have had cases where the limb has been thrashed about very roughly for several days, and even the patient standing and walking upon it without injury.

It is the best of dressing where the patient is to be transported, as is necessary in military practice, and not unfrequent in civil.

This dressing may be applied at any time during the treatment of a fracture: slight abrasions and vesications will heal readily under it, the plaster absorbing all of the exudation from such surfaces. It can be removed and a new one applied whenever necessary; but often one splint will be sufficient for the whole treatment.

MATERIAL FOR THE DRESSING.—Ground Plaster-Paris, water, canton flannel, and bandages. Preparation for dressing: shave or oil the limb, if it is hairy; cut from the canton flannel such a piece as will fit the limb; if for the leg, long enough to extend from the knee to the ball of the foot, and wide enough to envelope the foot and leg, except about an inch, or an inch-and-a-half, in front, which must be left uncovered by the dressing. One thickness will be sufficient, if for a child or youth; but two will be required for an adult. Thoroughly saturate the cloth in a solution of the plaster and water—equal parts of plaster and water, by measure. The plaster must be thoroughly mixed with the water. The solution, when well prepared, as above, will be about as thick as good cream.

ITS APPLICATION.—Apply this saturated cloth smoothly to the limb, and confine it with a bandage; not too tight, but snug enough to adapt it well to the part. While it is being applied, the limb should be held in extension, and, when on, it must be laid upon something where it will rest easily, and

then held in position until it "sets,"—which will take from ten to fifteen minutes; at any rate, it must be held until it is hard enough to keep its place; then it may be left to itself, and, in course of a few hours, it will be entirely dry. It is well to lay the limb with the extremity a little elevated. After it is dry, the bandage may be removed and another applied; but, if the limb is comfortable, there is no need of removing it until the part is to be examined, which should be done in the course of a few days. But, if there should be pain, it must be undone and so fixed as to relieve it. Our experience has been, that when the limb has been held well extended, and the fragments well co-aptated, there is entire freedom from pain as soon as the dressing is applied.

The best thing to lay the limb upon while drying is a feather pillow, being careful not to have the heel bear more weight than the rest of the limb.

PRECAUTIONS.—The plaster dressing must not surround the whole limb, but at least an inch or two inches must be left uncovered to prevent constriction, and to allow examination; then, as the œdema disappears, the splint can be tightened up to the limb by re-bandaging. The sides of the splint will give sufficient for this. Never pad or wad inside of the splint to make it fit; but, if for any reason, it does not fit, remove it and apply another.

The fragments must be held in place, and the whole limb in proper position, while it hardens.

Usually, cold water should be used to mix the plaster; but, if it is desirable that the plaster set more quickly, then warm water may be used; and if a little common salt is added, it sets very rapidly.

Canton flannel is the best to use, for it requires fewer pieces to render the dressing firm enough than plain cloth.

This dressing is applicable to all fractures of the leg, arm, fore-arm, hand, fingers, and about the knee, ankle, and elbow joints. It may be applied to the thigh, but it is not as good for that as the dressing known as Buck's method, by extension. But, wherever there are salient points for the dressing to be

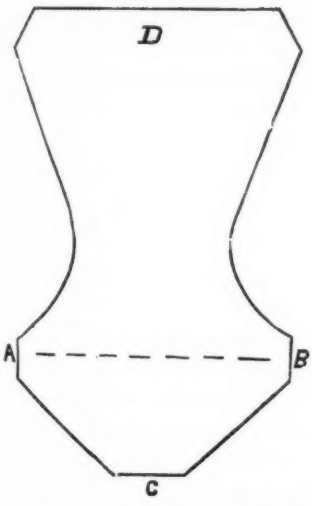
applied to, to hold the parts at rest, it seems to us to be the best dressing that can be used.

We have never used it for fracture of the patella, but would think the fragments could be held in place better with it than with most any other, by encasing the front and sides of the knee and holding the fragments together with the hand until it hardens.

In case of compound fracture, there is to be only a portion of the side or sides of the splint cut out at the point of injury, and the bandage removed as soon as the splint is dry, and so fixed that the discharges may run over the edge of the splint instead of under it. This may be done by filling in at the edge of the opening, a little lint or cotton; then cover it and the skin about the wound with isinglass-plaster or collodium, or both.

This method of using Plaster-Paris must not be confounded with the "plaster-bandage," nor with the old method of encasing the whole limb with a plaster mould.

(Fig. 1.)



(Fig. 2.)

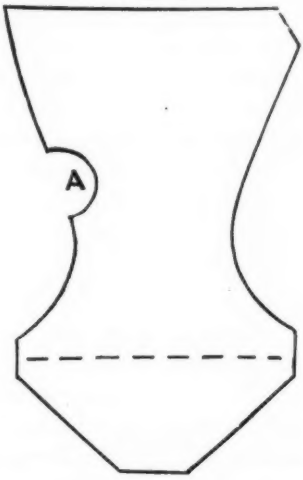


Figure 1—Is the form of the piece of cloth for the dressing. The heel should be laid on the middle of the dotted line *a b*,

and the foot portion *c*, and leg portion *d*, folded to the bottom and sides of the foot and leg, lapping about the sides of the ankle, or foot, as necessary to have it fit smoothly; then it is ready to be confined with a roller.

Figure 2—Shows a piece cut out of the side in case of compound injury.

ARTICLE XXXIII.

REMOVAL OF SALIVARY CALCULUS FROM EXCRETORY DUCT OF RIGHT SUB-MAXILLARY GLAND.

By CHAS. M. CLARK, M.D., Chicago.

History of Case.—*July 27th, 1870.*—Mr. S. came to my office, on the morning of July 22d, with, what he denominated, a *very sore throat*, accompanied by swelling underneath the tongue, which extended back on the right side, to the angle of the jaw, where quite a large-sized tumor could be defined. He had, occasionally, been subject to an enlargement under the angle of the right sub-maxillary, with considerable swelling under the tongue, for the past twenty years, but it had given him very little trouble or inconvenience.

It was most apt to occur at such times as he was conversing, or masticating his food, and then gave him some pain, until, by a peculiar manipulation with fingers and tongue, he reduced it.

The Symptoms—That were most prominent at the time he presented for treatment, were: excessive restlessness, some enlargement of right side of face; extreme sensitiveness when the parts were touched; increased flow of saliva and buccal mucus, of a ropy and adhesive nature; general febrile excitement; inability to swallow, but could manage to take a little water; mucous lining of floor of the mouth greatly enlarged and prominent, especially on the right side; temperature of the parts greatly increased, and a constant, dull, throbbing pain.

He stated that there was the sensation of *a* something draw-

ing his tongue upwards and backwards, and completely filling the fauces; yet, there was no dyspnœa at any time, and I considered the matter to be an exaggeration, for I could depress the tongue, but not sufficiently to allow a free examination of the throat.

THE DIAGNOSIS—Of this case, at first, was "ranula;" but, on his second appearance, this idea was dismissed, for there was wanting the characteristic, jelly-like cyst. In its place was a fleshy tumor, highly inflamed, and giving to the touch a sense of fluctuation. I then pronounced it to be either an abscess or a calcareous deposit that was seeking an outlet.

THE TREATMENT—Given the case is as follows:

July 22d—Made application, to the parts, of sol. nit. arg. ℥ij to ℥j aqua, which gave relief. Later in the day, I freely incised the tumor and scarified the surrounding membrane. No pus appeared, although the surface was secreting a creamy exudation looking like pus. The hemorrhage from the part did good.

July 23d—Repeated the treatment at my office, and with the same results, he being able to swallow with more ease.

July 24th—Complained of feeling worse; more difficulty in deglutition, with increased febrile action. Desired that I should visit him at his home.

Ordered chlor. potass., sol. sulph. morph. and glycerine for gargle; full dose of soda et potass. tart.; also, toler nt doses of ant. et potass. tort., and, later in the day, gave full doses of "hydrate chloral" in aqua camphora, but it had no effect as a hypnotic, and I had recourse to morphia. During the afternoon, he suffered immensely; complained that he could not swallow, and that his tongue was being drawn up to the roof of his mouth. I gave him inhalations of chloroform, and applied it to the face externally, which gave prompt relief.

At 9 P.M., ordered a stimulating pediluvium and gr. xv. of Tulley's powder; also, put a bistoury into the tumor.

After this treatment, he was able to take a cup of gruel without much inconvenience.

July 25th—Discovered a hard point in the tumor beneath the

tongue, and made a free incision, after which extracted a salivary calculus, weighing thirteen (13) grains, and composed, principally, of carbonate of lime. The following diagram will give an idea of the shape and size:

The extraction was followed by a small amount of pus.

The patient is an Englishman by birth, 36 years old, and an upholsterer by occupation, although for many years he pursued the avocation of a miner in Australia.

His voice, which has heretofore been harsh and coarse, is now as flexible and resonant as it was in his youth.

Correspondence.

PROF. DAVIS:—Is it true that the practice of homœopathy is interdicted in Russia?

Some months ago, I read a statement in some of our medical journals, that the Emperor of Russia, after giving homœopathy a fair and impartial trial, for three years, in hospitals set apart for that purpose, in St. Petersburg, had issued a decree that homœopathy should not be practiced in any of the dominions of Russia, under penalty of fine and imprisonment. Will you be kind enough to give us the truth of this matter, in as full a manner as possible, and oblige many who wish to use this fact as a climax, and as a *clincher* to our anti-homœopathic arguments, with the deluded admirers of the *similia similibus curantur* vaguery, the champion system of small ideas—unexampled in their narrowness—and of small doses, microscopic in their dimensions.

Yours, truly,

THEODORE GRIFFIN, M.D.,

582 South State Street.

Abridgments from Our Exchanges.

Oxygen Gas as a Remedy in Disease.—In the May number of this journal, we published entire the first three chapters of the able essay of Dr. A. H. Smith on this subject. The four remaining chapters treat directly of the therapeutic uses of oxygen. We summarize this portion of the paper as follows:

The diseases in which oxygen is most useful are of two classes: those in which respiration is at fault, mostly acute; and those in which there is defective nutrition or excretion, chiefly chronic.

Oxygen in Impaired Respiration.—Every condition in which there is dyspnœa will be benefited—temporarily at least—by the use of oxygen. The essence of dyspnœa is a disproportion between the quantity of venous blood in the lungs, and the amount of oxygen in the air cells; by breathing pure oxygen the equilibrium is restored.

Asthma.—The dyspnœa in this affection would at once suggest the use of oxygen. Beddoes used it in twenty-two cases, ten of which were cured, nine relieved, and three received no benefit.

Demarquay reports a case cured and one greatly relieved, and Birch reports one of absolute cure.

In the hands of Dr. H. Pinkney, in one case it relieved the paroxysms and reduced their frequency. Beigel reports three cases, one hereditary, in which oxygen was inhaled with liq pot. arsen. The paroxysms were relieved, and the tendency to recur decreased.

Surg. Gen. Barnes gave oxygen to the late Secretary Stanton, who had severe paroxysms of asthma during his last illness. It controlled the asthma completely.

Dr. Smith himself has given oxygen in two cases of asthmatic paroxysms, with the effect of immediate relief, but it was not continued during the intervals.

Pulmonary Emphyesma.—Dr. Beigel reports a very severe case in which, by inhalation of one gallon of oxygen every three hours, there was a prompt amelioration of the distressing symptoms; at the end of six weeks they had nearly all disappeared. During this time there was a solution of common salt, repeatedly taken by inhalation [atomized], also pure water. Subsequent to this a solution of tannin and morphia was used in connection with the oxygen. At the end of two months, the patient returned to business, still obliged to use the oxygen at intervals. He continued to improve under its use.

Another case is reported where oxygen was given only for a short time, and mainly for dyspnœa; this was relieved at every administration; the countenence lost its livid hue, the pulse fell from 122 to 100, and the respiration from 36 to 20.

Croup.—Dr. Beigel describes a severe case of croup in which the

usual modes of treatment had proved unavailing, the respiration being 40 and noisy, and the pulse too rapid to be counted, lips livid and face pale. The inhalation of one cubic foot of oxygen was followed by decided improvement: it was repeated, and the child made a prompt recovery. Dr. Miguel reports a case with symptoms identical with the above, in which recovery followed the use of oxygen. "I have been called in to give oxygen in several cases of croup, but always in the last stages, and when dyspnœa had been long continued. Under these circumstances, although the dyspnœa has been relieved, death has taken place."

Oxygen will do in croup all that can be done by tracheotomy, but neither is competent to undo the mischief wrought by prolonged dyspnœa. Hence the rule, with oxygen as with the knife—*use it early.*

Diphtheria.—Dr. Beigel reports two cases in which a state of coma disappeared at once on the administration of oxygen; the eyes became bright, the pulse rose, the face became ruddy, and the appetite soon returned.

I have given this agent in only a single case of diphtheria; the patient was in *articulo mortis*, but life was sustained by it for five hours, the patient choking at every suspension of it, and dying in five minutes after its administration was stopped. In this disease we have, added to the dyspnœa, a septic condition of the blood, which greatly depresses the powers of life.

Pneumonia.—Dr. Golden reports a case of double pneumonia, with great dyspnœa, which resolved in four days under the use of oxygen.

Despite its contra-indication in acute inflammation, "I should not hesitate to use it in a case of double pneumonia;" the fear that it will excite pneumonitis by its local action is without foundation.

Capillary Bronchitis.—In this affection oxygen is especially valuable, as, while relieving the dyspnœa, it diminishes the formation of mucus in the lungs, which latter is largely the result of labored repiration. Inhalation of oxygen removes the necessity for forced breathing, and thus lessens congestion of the mucous membrane, and lessens the tendency to effusion. Hence it is not only palliative but curative.

In *opium poisoning* and in *cholera* collapse there exist rational reasons, and no little evidence, practically, in favor of the use of oxygen.

The Use of Oxygen in Diseases with Defective Nutrition.

Phthisis.—We have abundant evidence to show that in this disease, as in others in which nutrition is defective, as a rule, the use of the gas favors assimilation, and results in a gain in weight. But whether it exerts an influence on the morbific principle, the essence of the disease, facts alone can determine, and, up to the present time, sufficient facts have not been gathered to warrant an answer.

There is considerable evidence to show that oxygen may arrest the progress of the disease for a time, and possibly eradicate it. Experiments show that oxygen, in contact with a wound or ulcer, acts as a stimulant, and, carried too far, sets up active inflammation. Herein we have a therapeutical indication, and possibly a solution of our failures with oxygen in phthisis, especially in its advanced stages. Too little diluted it may excite inflammatory action in the pulmonary ulcers, and thus aggravate the general disease. There are cases on record, with cavities and purulent expectoration, in which oxygen has been for a time beneficial, but has then produced symptoms of local inflammation. By diminishing the action in time, this effect would be avoided, and the benefit gained be retained.

Demarquay reports two cases and quotes a third in which phthisis had advanced so far as to develop cavities, and extreme emaciation and prostration, and when oxygen was given—in small quantities at first, and carefully increased—with the effect to bring the patients up to a good degree of vigor and comfort, but not radical cure.

M. Hervé de Lavour, also quoted by Demarquay, has given oxygen in nine cases of this disease. In three cases, under the use of four gallons daily to begin with, increased to twelve gallons taken at two sittings, the patients made rapid and sure improvement. The other six cases received little or no substantial benefit from the treatment.

Birch reports two undoubted cases of absolute cure of phthisis by oxygen.

Experiments made upon ten consumptives in the New York Hospital, giving each six gallons of oxygen daily, caused the weight of six to increase in four weeks an aggregate of forty-nine and a-half pounds, while the other four lost seven pounds. In several cases, there was at first a rise in temperature, which disappeared on suspending, for a short time, the gas.

After relating three cases of his own, which seem to show perfect cures, and statement of several in which success was less flattering, Dr. S. says: "While not prepared to endorse the opinion of Birch, that, with the use of oxygen, the cure of consumption in its earlier stages should be the rule rather than the exception, I have no hesitation in saying, that I have more confidence in it than in any and all other remedies."

In *anæmia*, oxygen is strongly recommended, and two cases are detailed to show its almost magical effect in this condition.

In *dyspepsia* it has succeeded when all other means failed. Trousseau commends it in highest terms, and speaks of having "*recalled to life* women regarded as lost from great depression of the digestive powers. Demarquay relates a similar experience. Birch insists on the power of oxygen to remove congestions of the liver, and to relieve the dyspepsias resulting therefrom.

In *diabetes*, while there are no records of cure by oxygen, there are several cases which have received from it decided benefit.

La Passe, Hill, Demarquay, Birch, and Dr. Mackey all testify to the power of oxygen to promptly relieve the ordinary headaches, neuralgic and "nervo-congestive."

Of cases of *epilepsy* treated with oxygen by various observers, four were cured, while five received no benefit.

Application of Oxygen in Surgery.

Demarquay compelled a dog, with a wound near the axilla, which looked dull and had grayish edges, to breathe pure oxygen. In two minutes the wound became rose red. The surface presented some small ecchymotic spots, which bled slightly, and an abundant serous discharge flowed from the surface of the wound. On suspending the inhalation, the wound changed to its former color at once, and the surface became dry and dull-looking, like a mirror breathed upon. He observed a like effect from the same course on the human subject. Taking the hint from such experiments, oxygen has been used in many cases of slow-healing wounds and sores. Many cases are reported of ulcers, scrofulous and syphilitic, of long standing, which have been most happily cured by this means. One of these ulcers had resisted all treatment for 18 years; six months after cure it had not reappeared.

Action of Chloral on the Insane.—Dr. J. B. Tuke, Supt., &c., Lunatic Asylum, has instituted some experiments to determine the effect of hydrate of chloral in the treatment of the insane. He selected, upon which to experiment, a case of chronic alcoholism, with acute mania; two cases of asthemic insanity, with melancholy; and a case of climacteric insanity, accompanied with melancholy.

These patients were carefully observed for three days previous to the use of the chloral, and the temperature, pulse, respiration, and general condition were carefully noted. For the next four days, half-drachm doses of the medicine were given, morning and night, the effect being noted. On the next three days, the medicine was omitted, when it was again administered for four days. Subsequently half-drachm doses were given at night, for a few nights, and then entirely discontinued.

In the first case much improvement followed the use of the remedy; the patient was much quieter, and sleep was improved. She had been very maniacal for weeks before this treatment, but after it, became conscious, went to work, and slept in the general dormitory.

With the second patient, after the treatment there was "well-marked improvement in the case."

Of the third patient, he says, after the chloral had been given for a time, "her mental symptoms were much abated. She began to work, and, although still miserable, to see some hope for herself. On discontinuing the chloral, restlessness and irritability returned,

which were again allayed on its resumption." The medicine was then given four days, with good results, after which it was declared that she was well on the road to convalescence, that she was employed as a housemaid, slept well, and was rapidly gaining in bodily condition.

The fourth case was a remarkable one. The patient was noisy, restless, and dementedly melancholy; her case was regarded as almost hopeless.

The effect of the chloral on this case was striking; a sleep followed each dose. On leaving off the medicine temporarily, the old symptoms—which, while the drug was being taken, were held in abeyance—returned, but with less severity. When resumed, it produced the same effect as at first; on its second discontinuance the condition of the patient was much improved.

Dr. T. has used it frequently in chronic cases of insanity, in which violent outbursts of excitement occur, and always with good effect.

The insomnia of climacteric melancholy is much relieved by a dose of 30 or 40 grains at bedtime.

He regards it as the most valuable means of procuring sleep now in use by asylum physicians.

There is some difficulty in ascertaining the exact dose for each case; but this is obviated by beginning with half-drachm doses, and increasing till the limit is found.—*Lancet.*

Prognosis in Chronic Diseases of the Heart.—On this subject Dr. Austin Flint has written an interesting and very valuable paper, with the evident intent mainly to mollify, in some measure, the gravity of the usual prognosis in the cases referred to.

It is, he says, a popular belief that all cardiac lesions are alike dangerous: all liable to end fatally at any moment, and a patient afflicted with such disease is regarded as under sentence of death, the execution to occur without warning.

But there are lesions which are devoid of immediate danger, and sudden death from heart disease is the exception and not the rule.

Prognosis must be based on diagnosis; while by auscultation and percussion the diseases of the heart are discriminated with more precision, promptness, and positiveness than those of any other province of the nosology, a too exclusive reliance on physical signs is apt to lead to errors in prognosis, so prejudicial to the patient that it were better the information had not been obtained. This may seem strange, but it is true; it arises from want of appreciation of other circumstances than physical signs.

A patient may have the heart's action disordered, irregular, or intermittent; these symptoms may persist or recur often, and he may have dyspnœa and pain at the præcordia. General dropsy may occur, the kidneys being free from disease. With all these phenomena cardiac lesions may not exist; the disturbance may be

purely functional. There may be even angina pectoris, without organic lesion. This affection may occasion death without cardiac lesion, but this must be rare. With the exception of these rare instances, if the affection of the heart be purely functional, there is no danger. The question, then, upon which prognosis hinges is: Does cardiac lesion exist? If auscultation and percussion show an absence of it, we may declare the affection functional and without danger.

Lesions of the valves which cause murmurs do not always portend immediate or even remote evil consequences. Many persons pursuing their avocations have, unconsciously, organic disease of the heart. Some of these may eventually die of this trouble, yet not a few will live to a good age, and die of some other disease. But let such an one be informed of his malady, and he has received a blow from which he will never recover; he looks upon himself as doomed. The depressing effect of the diagnosis shortens his life. "I have records of cases in which organic endocardial murmurs existed from ten to thirty years ago, the persons now living, and exempt from ailments referrable to diseases of the heart."

The intensity and quality of heart murmurs are not of much account in judging of the importance of valvular lesions. A loud, rough, or musical murmur does not necessarily indicate a more grave lesion than one that is soft, feeble, and blowing.

Barring the accident of embolism, in valvular lesions producing murmur, there is no danger so long as the heart is not enlarged; for valvular lesions cause enlargement of the heart before any other effect that jeopardizes life. Moreover, in most cases, enlargement of the heart from valvular lesions is produced slowly, the ulterior effects being proportionately distant.

Hypertrophy of the heart, as a result of obstruction to the blood-current, or regurgitation, or both, is a conservative provision. The increased muscular power makes amends for the disturbance of circulation, and prevents evils which would otherwise ensue. A patient is comparatively safe even though the heart be greatly enlarged, provided this be from muscular growth or hypertrophy. There is, however, nothing conservative in dilatation, but the opposite. In proportion to the dilatation is the ability of affective contraction impaired; it increases the labor of the contraction by allowing a larger accumulation of blood. It is by means of this weakness that valvular lesions lead to remote evils—systemic congestion and general dropsy. Hence the necessity to determine whether an enlargement is a dilatation or hypertrophy.

While hypertrophy compensates for valvular lesion, this in turn sometimes may be conservative as regards hypertrophy. Certain evils, liable to occur from hypertrophy of the left ventricle if the valves be sound, are warded off by co-existing valvular lesions.

Statistics show that there is more danger of sudden death from distension with blood, and paralysis of the left ventricle as a result

of aortic obstruction or regurgitant lesions, when these exist alone, than when associated with mitral lesions.

Cases occur in which, with organic disease of little consequence, functional disturbance is induced by other causes. This is very apt to be imputed to the organic lesion, and a needlessly grave prognosis be given.

There is a vast difference among patients in the toleration of chronic heart disease; the power to withstand its effects is in proportion as the other functions of the body are healthfully performed; this relates more especially to the whole function of nutrition.

In the majority of cases of chronic heart disease, the cardiac lesion is not exclusively or directly the cause of death. Most patients perish from intercurrent affections, dependent upon, or accidentally associated with, the heart lesion. Of the cases where cardiac lesions are fatal, sudden death occurs in a very small proportion.

Of valvular lesions, those which occasion aortic regurgitation involve the greatest liability to sudden death. The immediate cause of death is paralysis of the left ventricle from over-distension.

Fatty degeneration, with valvular lesion and dilatation increases the liability to sudden death; but it is not easy to determine this combination during life.

There is danger of sudden death when angina pectoris is associated with organic disease of the heart, and most when this latter is aortic regurgitation, the mitral valve being sound; and association with fatty degeneration increases the danger. In angina there is little or no danger, unless the patient have a sense of impending death and feels the necessity of perfect quietude.—*New York Journal of Medicine.*

Supra-Uterine Pressure.—This is the name which Dr. J. H. Grant (*N. O. Med. Jour.*) gives to an expedient he has resorted to with success, as an aid in difficult labor. It consists in the application of strong, firm, and equable pressure over the whole region of the fundus uteri, at a stage of the labor when, with dilated, or dilatable os, with a normal presentation, and no obstacle to the labor, save the want of power to propel the fœtus through the parts, the labor does not progress. It is applicable to that class of cases in which the forceps and ergot are resorted to. He believes it may and ought to displace the use of these means altogether. In some of his cases a pressure was made of not less than forty pounds.

The hands of one or more assistants are to be spread out over the fundus uteri, and any amount of pressure necessary to enable the uterus to move forward its contents should be applied. As soon as the pressure is commenced the pains augment in intensity, and return with great regularity. The pressure assists nature to do her work in her own way. The character of the pains differs from that

induced by ergot; this drug excites the uterine fibra, inducing great irritability, and, if delivery does not speedily follow, may do much mischief. The pains from the pressure are natural; the uterus is not forced to expel its contents, but is assisted to do so. If the pressure is made to embrace a considerable portion of the body of the uterus, it has a tendency to support that organ and preserve it from rupture. Reason would teach that an organ like the womb cannot be ruptured by pressure in the longitudinal direction of its fibres. Supra-uterine pressure equalizes uterine action, and causes all parts of the organ to act simultaneously and regularly. Nor need we fear injury to the fœtus; the pressure is made on the fœtus as a whole, and not on any particular part. Obliquity of presentation, want of flexion, and rotation are deviations which commonly result from atonic action of the uterus. By physical assistance of the organ, bringing it to a point of vigorous action, these difficulties will be overcome.

This mode of practice promises to be very useful in placenta prævia. In these cases we can, in the early stage, hold the hæmorrhage in check with the tampon, till the os is dilated, when we can accelerate the advance of the child to any desired extent, and, as the after-birth separates from the cervix, the head of the child will form an effection tampon, and restrain the bleeding till the birth of the child.

He usually prefers that, when this practice is resorted to, the parturient woman be sitting across the midwife's lap.—*N. E. Journal of Medicine.*

Vaginal Ovariotomy. *By Dr. P. G. Thomas.*—In a multipera of sparn habit and nervous temperament, there was discovered a movable cyst behind the uterus which pushed that organ forward, and occupied completely the cul-de-sac of Douglas. It was of the size of a large orange, and could easily be pushed out of the pelvic cavity. The patient had supposed she had retroflexion, but Dr. J. L. Brown diagnosed it as cystic degeneration of the ovary.

On consultation three plans of procedure were proposed: that the cyst be allowed to develop, and be operated upon sometime in the future; that the cyst should be tapped per-vaginam; and that the operation of ovariotomy be performed through the fornix vaginæ, in the same manner that it is usually done, through the abdominal walls. The last proposition was made by myself, and upon these grounds:

1. The cyst being movable, sufficient space could be obtained through the fornix vaginæ to withdraw the empty sac.

2. This procedure I preferred to simple tapping, which is liable to be followed by drainage and exhaustion to the patient. The increase of danger was not regarded as great, even if removal of the cyst proved impossible.

3. An early operation was advisable, owing to the anxious nature of the patient.

The operation being decided upon, the patient was etherised and placed in the knee-elbow position by the apparatus of Dr. Bozeman.

To prevent the rectum falling into the line of incision, a rectal bougie was inserted for about five inches.

Sims' speculum was introduced, the perineum and posterior vaginal wall were lifted, and the fornix vaginæ was caught midway between the cervix and rectum with a tenaculum, drawn well down, and with a pair of long scissors, one limb of which was placed against the rectum and the other against the cervix, a cut was made through it into the peritoneum at one stroke.

The patient's position was now changed to the dorsal decubitus, and, passing a finger through the incision, it touched the tumor which had fallen again into the pelvis.

With a trochar—it having been secured with a tenaculum—I punctured three cysts which gave vent to six or eight ounces of fluid, resembling vomited bile. Drawing upon the cyst it passed easily into the vagina.

The patient was now placed in Sims' position, on the left side, and his speculum introduced. A needle, armed with a strong double silk ligature, was passed through the pedicle at its point of exit through the vaginal wall, and each half of the penetrated tissue was tied, and both cyst and ligature were cut off. The cul-de-sac of Douglas was then sponged, the pedicle returned to the abdominal cavity, and the incision closed by one silver suture.

After the operation the patient was kept quiet by opium, and kept in the supine position. After ten days of improvement, and without any unfavorable symptoms, she was allowed to exercise herself unduly, and brought on an attack of peri-uterine cellulitis. She recovered from this, and on the thirtieth day was declared out of danger.

Any one undertaking this operation should rehearse the first step of it upon the cadaver before attempting it upon the living subject. Before making this operation, one attempt was made on the cadaver. The difficulty in this attempt induced me to practice the procedure on seven other dead bodies before attempting it on the living.—*Am. Journal Medical Science.*

Form of Neuralgia of the Jaw-Bones Hitherto Undescribed. (*By S. D. Gross, M.D., Prof. Surgery, etc.*) The seat of this affection is in the remnants of the alveolar process of edentulous persons, or in the alveolar structures of the overlying gums, and occurs mainly in elderly persons. It occurs most often in the upper jaw, and usually affects but a small extent of surface. The soft tissues in the immediate vicinity do not seem to suffer as in ordinary neuralgia, save in a slight degree. The morbid action is

generally limited to the bone, although the gum may be, in rare instances, involved. The gum is nearly always hard and dense, grating under the knife, and adhering with great firmness to the atrophied alveolar process beneath.

The pain is generally paroxysmal, as in ordinary neuralgia, the slightest causes provoking it, as talking, masticating, the contact of hot or cold fluids, deglutition, or mental excitement. Sometimes it is momentary, occasionally it lasts for hours, and a few cases occur in which it continues with little mitigation for an indefinite period. The pain varies in character, and pressure relieves rather than aggravates it.

The pathology of the affection seems to be compression of the minute nerves distributed through the wasted alveolor process, dependent upon the encroachment of osseous matter upon the walls of the canals in which they are naturally enclosed. The osseous structure is always abnormally hard from the deposit of new substance which imparts to it an almost ivory-like consistence.

The disease usually comes on gradually, growing worse, until the suffering is intolerable. The general health becomes eventually impaired, the appetite deranged, the sleep disturbed, the countenance anxious, digestion imperfect, bowels constipated, and the spirits much depressed. Sometimes the disease would seem to be of malarious origin, the attacks coming on periodically. The professor gives a history of six cases which illustrate this disease, and the treatment he institutes for its relief.

The treatment consists in carrying an incision along the alveolar ridge over the painful structures, dividing and turning aside the soft parts, including the periosteum, and removing, by means of cutting pliers (con-tructed for the purpose), and the gouge, the affected bone to a level with the palatine process.

He has not found the bone at all diseased, and, from all his operations, recovery has been both prompt and complete.—*Am. Journal of Medical Science.*

Double Salts of Carbolic Acid. — The difficulties in the administration of carbolic acid have peen overcome in the discovery and employment of salts of the sulpho-carbolic acid ($C_6H_6S\,O_4$) with the alkaline, earthy and metallic bases. The first compound salt, the sulpho-carbolate of potash, was obtained by Crooks. Dr. Sansom has produced in addition the following salts, all having the character of true double salts, and possessing brilliancy and decidedly crystalline forms: sulpho-carbolate of sodium, of pot s-sium, of ammonium, of magnesium, of zinc, of copper, and of iron. An inquiry instituted with a view of determining the relative efficiency of the various salts in staying fermentative action, established the following results;—1, the sodium salt; 2, magnesium; 3, potassium; 4, ammonium. It has been shown, from experiments upon the lower animals, as well as from the results of administra-

tion to the human subject, that the following is an outline of the plan of action of the sulpho-carbolates: They are absorbed with great rapidity, exert no toxic effect (the human subject readily taking drachm doses every four hours), are decomposed in the system into—*a*, carbolic acid which, traversing the system, is exhaled by the breath; *b*, sulphate of soda, which permeates the tissues after death. It is shown that an influence, enabling the body to resist putrefaction, has been exerted; the urine passed also resists decomposition. Prolonged courses of sulpho-carbolate of sodium, given for two months to phthisical patients, show that the drug could be administered not only with impunity, but with considerable advantage. Of 35 cases, 13 greatly improved; 15 considerably improved; and 9 cases gained in weight an average of $2\frac{1}{2}$ pounds.—*Med. Times and Gazette, Half-Yearly Com.*

Dr. Edward Lawson (*Practitioner*) says, the sulpho-carbolates are not powerful *direct* antiseptics; they are far less powerful than carbolic acid; half a grain of pure acid is equal to twenty grains of sulpho-carbolate of sodium. Not only is the salt as compared with the acid far less efficient in destroying the life of vegetable cells, but the acid loses in this power by combination with the base; *i. e.*, one grain of the acid, when free, is as efficient as twenty times that amount in combination. But these salts can be readily administered without difficulty or danger; *in transitu* throughout the system the carbolic acid becomes evolved, producing its effect. In the sulpho-carbolate we are enabled in effect to administer carbolic acid in an innocuous form, and in larger quantity than otherwise possible.

The *sulpho-carbolate of zinc* has been used as an external application in the form of lotion. Ten grains should be dissolved in an ounce of distilled water. It abolishes the fetor of pus-forming surfaces, and is superior to carbolic acid on account of the absence of irritating qualities, and of all unpleasant odor.

For internal use, the sulpho-carbolate of sodium is preferable; its solution in water has no unpleasant taste. The dose is 20 to 60 grains.

Given in phthisis, while it has no power to arrest the disease, there was a steady gain in nutrition; in many cases the strength increased, rest improved, the fetor of expectoration was arrested, the night sweats decreased, and the appetite improved.

I employed it in five cases of severe tonsillar ulceration, which all rapidly recovered without suppuration.—*Half-Yearly Compend.*

On a Rare Disease of the Joints.—Dr. Samuel Jackson, Emeritus Professor, etc., gives an account of several cases that have fallen under his observation, of a rare form of disease resembling rheumatoid arthritis, if they are not examples of this affection.

The peculiarity of the malady is, that it is confined to a single tissue—the ligamentous—the general health of the patient not being disturbed.

So far as his cases indicate the character of the disease, it seems to continue for years, to be incurable, but to have no direct tendency to cause death.

In one case in which the joint of the wrist and hand was the one affected, all the bones were dislocated. In another, both wrists were dislocated at every movement. It was evident that the cartilage had disappeared, and that the bones had become smooth by friction upon each other.

A third case had every joint dislocated and stiffened; yet the general health was good, and the patient lived for years with no pain save on an attempt at motion.

One patient traveled extensively, and received the best care and treatment for ten years. "During all this time the disease gradually progressed, stiffening the joints, until she became incapable of motion, and had to be carried about, fed like a child, and waited upon. And yet her general health is perfect, and has always been so; her organic functions are unimpaired, and her spirits are not affected."—*American Journal of Medical Science.*

New Treatment for Aphonia.—Dr. H. K. Olliver, of Boston, contributes a paper to the *Am. Jour. of Med. Sciences*, in which he describes a novel mode of treatment for "Phonic Paralysis," or "paralysis of the adductors of the vocal cords," a form bilateral in character, and usually dependent on debility, hysteria, or some other impairment of the nervous system, but sometimes upon emotional influences and weakness of the muscles following laryngitis or straining of the voice. The laryngoscope reveals partial or complete paralysis of the cords. In the latter case, these ligaments remain widely open on attempted phonation, while in the former, they approach the median line, but not sufficiently to produce a sound, or if they do, are not held together with sufficient force for this purpose. The methods of treatment commonly employed in this affection have been galvanism, stimulants to the larynx, the "gymnastics of the larynx," the use of anæsthetics and general hygiene. Moreover, the voice has been known to be restored suddenly, under some general excitement or mental impression.

In addition to the above treatment, he proposes that by the manipulation of the larynx. This consists chiefly in compression of the thyroid cartilages in their posterior and upper part, by the thumb and forefinger. Such compression practiced on the dead subject will approximate the arytenoid cartilages and the vocal cords, which latter will become tense. In the living subject, pressure produces the same effect, as may be seen by the laryngoscope.

In using this treatment, the patient is instructed to make an attempt to produce a sound like that of *a* or *ah*, or any sound of the voice whatever, while the larynx is being compressed.

Many of these cases seem to depend on a lack of power to *start the machinery* of the vocal apparatus; when once started, the power of keeping up the action is easily afforded; the paralysis seems to be of an unusual character. Well-known instances of sudden restoration of voice show a condition peculiar to the laryngeal muscles. Quacks have restored the voice immediately by grasping the throat and violently compressing it. Such recoveries may have been owing partly to a mental impression upon the patient, but may have been aided by such an adaptation of the parts of the larynx as is described, albeit a condition unappreciated by the operator.

As an aid to this manipulation he takes advantage of the valvular nature of the vocal cords. The vocal cords, when approximated, constitute a valve opening outward, while the false cords form a valve opening inward. In the complete glottic closure, when inspiration and expiration are impossible, the former act is prevented by the vocal cords and the latter by the false cords. The degree of approximation necessary for producing vibration with inspiration, seems to be considerably less than that required with expiration, proof that the form of the cords offers a greater resistance to the inflowing than the outflowing air. Now, by the method suggested, the cords are sufficiently approximated to offer resistance to the air by compression of the cartilage, and a still greater approximation sufficient for vibration of these ligaments, is made by strong and sudden inspiration. In the two most obstinate cases reported, a voice sound could be produced by inspiration before any could be made by expiration. When once started, however, the natural voice was soon established. Dr. O. gives the history of six cases—all in which he has employed this method of treatment—and they all show successful results. The longest time any one had been aphonic was eight years, and the shortest three months.

The manipulation and pressure were made for a few minutes at a time, intervals of rest being allowed between, and no case required a treatment in this way for more than an hour. In nearly all the cases there was a tendency to whisper after the voice was restored, and the patients were instructed to read aloud daily. This had the effect to make the cure complete.

Veratrum Virida in Pneumonia.—Dr. T. M. Woodson, in

the *American Practitioner*, strongly advocates the use of veratrum in pneumonia. He gives a history of four cases in which he used it in six to seven drop doses every three or four hours, with large doses of Dover powder, and sometimes calomel. Some of these cases were very severe, the pulse reaching 132, with the temperature 105°, and respiration over 30. The drug brought down the pulse promptly, sometimes with vomiting and purging, but safely, to from 55 to 70 per minute; the temperature and respiration were proportionally reduced, and convalescence was speedily established. The doctor has followed this practice for many years, with fine success. The veratrum works more kindly in conjunction with opium, and these two agents he places at the head of all remedies for the active stage of pneumonia.

Catarrh of the Uterus.—Dr. G. W. Hamilton, writing on this disease in the *Buffalo Med. and Surgical Journal*, claims that its pathology consists in dilation of the capillaries and congestion of the lining of the uterus. When there is no ulceration, he advocates the use—in addition to good hygiene, and such medicines as will regulate the bowels and secretions, and improve the digestion and general health—of injections of persulphate of iron, of the strength of 24 grs. to the half-pint of water, and the internal use of ergot in moderate doses for several weeks continuously. The ergot operates by increasing the tonicity of the capillary bloodvessels of the uterus, improving the circulation and removing the congestion. Ergot does not retard the circulation unless given continuously and in large doses; it may be given a long time in proper medicinal doses, without any bad effect whatever.

Bromide of Potassium in Its Effect on Children.—E. Montard-Martin, of the Beaujou Hospital, France, reports a number of cases to show the effects of this drug on infants and small children. It is invaluable in all cases of dentition, where there are aggravating nervous symptoms, and it is improper to give opium. In sleeplessness of infants, in cough purely spasmodic, he gives it in doses of $\frac{3}{4}$ gr. once or twice a day to children from three months to a year old. In purely nervous cough it is equally indicated; but it should not be given in diarrhœa, as it increases this difficulty. In excessive erethism of any sort, and especially in those cases of boys where there is almost constant erection of the penis, it works most happily.

When administered to infants, the breast should be given at once afterwards.—*New York Medical Journal.*

A Placenta Previa and Double Births is recorded by Dr. Maquida, of Mississippi, in which the mother and both children were saved. The first child presented by the breech, and crowded aside the placenta without wholly detaching it from the uterine walls; it was a small child. The second presented by the occiput, forcing down the placenta and directly occluding the os. With a little assistance the placenta was wholly detached from the uterine walls, and the delivery completed with no excessive hemorrhage.—*N. O. Med. Jour.*

Humulus Lupulus in Intermittent Fever.—Dr. W. Y. Godberry, of Benton, Miss. (*The Jour. Materia Medica*), regards the anti-periodic power of humulus lupulus as equal to that of any other article in the Materia Medica, except quinia, and has often found it to succeed in arresting intermittents after quinia had failed.—*Medical Record.*

Physicians and Druggists in America.—Dr. A. B. Prescott, of Ann Arbor, Michigan, states that there were 55,000 physicians in this country at the last census, and 11,000 druggists. At present there are about 74,000 physicians.

Book Notices.

The Practice of Medicine. By Thomas Hawkes Tanner, M.D., F. L. S., Member of the Royal College of Physicians, Fellow of the Royal Society of Literature, etc., etc. Fifth American, from the sixth London Edition, enlarged and thoroughly revised. Philadelphia: Lindsay & Blakiston. 1870.

This is an elegant volume of 1200 pages, containing a copious index, and numerous formula, besides a fair summary of the present state of Medical practice. It is a convenient work, but too well known to require an extended notice. In the appendix we find about forty pages of fine print, devoted to the consideration of climates for invalids, and mineral waters; which contain much valuable information.

For sale by S. C. Griggs & Co. Price, $6.00.

The Physical Exploration of the Rectum; with an Appendix on the Ligation of Hemorrhoidal Tumors. By William Bodenhamer, A.M., M.D. Illustrated by numerous drawings. New York: Wm. Wood & Co., 61 Walker St. 1870.

This is a monograph of 54 pages, on a subject of much practical importance. It is illustrated by numerous well-executed cuts, and written in good style. The author has studied his subject well, to which has been added an ample practical experience. Every practitioner will find it very useful and convenient.

A Guide to the Examination of Urine; for the Practitioner and Student. By J. Wickham Legg, M.D., Member of the Royal College of Physicians; Physician to the St. George, Hanover Square, Dispensary. Second Edition. Philadelphia: Lindsay & Blakiston. 1870.

This is a small volume of 88 pages in flexible binding, and contains a plain, concise account of the most practicable methods of examining the Urine, for the purpose of ascertaining its qualities and composition, in health and in disease. Its cost is trifling, and it will be found very convenient both for students and practitioners.

Half-Yearly Compendium of Medical Science. Part 5, July, 1870. Philadelphia: S. W. Butler, M.D., 115 South Seventh Street.

This is a copious abstract of the more important matter that is published in American Medical Journals, with some additional from foreign sources. The present number is printed on good paper, and contains 304 pages. For such practitioners as are able to subscribe for only one or two regular medical periodicals, the Compendium is a most valuable publication. It is edited by Drs. S. W. Butler, D. C. Brinton, and G. H. Naphys, all industrious men. Price, $3.00 per annum.

Editorial.

MEDICAL COLLEGES IN CHICAGO.—The next annual course of instruction in the Chicago Medical College and Medical Department of the Northwestern University will commence on Monday, October 3, 1870.

The Introductory Lecture will be given in the evening, by Prof. H. A. Johnson. As it will be the formal opening of the new college building, it is expected that the President and Faculty of the University will be present and participate in the exercises, thus making the occasion one of more than ordinary interest. The College is on the corner of Prairie Avenue and Twenty-sixth Street, in immediate connection with the Mercy Hospital and Dispensary.

THE RUSH MEDICAL COLLEGE commences on Wednesday, the 28th of September.

THE WOMAN'S HOSPITAL MEDICAL COLLEGE commences on Tuesday, October 4th.

CHICAGO now has a population of about 300,000, and her colleges and hospitals afford as good facilities for medical instruction *in every department*, as can be found in any city in the United States.

CORRECTION.—The case of Ovariotomy reported in the September number of THE EXAMINER, and credited to "M. A. Chase, M.D., of Siruoza, Wis.," should have been credited to H. A. Chase, of Viragua, Wis.

In the record of proceedings of the Illinois State Medical Society, the name of Dr. O. Everett, of Dixon, is printed Dr. O. *Evarts*, and that of Dr. George W. Hewett, of Franklin Grove, is made to read George W. *Heath*. We have read manuscript for many years, but we continue occasionally to misinterpret the names of both men and places.

NEW WORK.—We see by some of our exchanges that Prof. Byford's work on the "Theory and Practice of Obstetrics," has been published by Wm. Wood & Co., of New York. It is represented as an elegant volume of 450 pages, well-illustrated with cuts, and well-adapted for the use of students and practitioners. It is less

voluminous than most of the standard works on Midwifery, and yet sufficiently full in direct practical details.

We shall notice it more at length when we receive a copy of the work.

BRITISH MEDICAL ASSOCIATION.—The Annual Meeting of this Association commenced in Newcastle-on-Tyne, August 9, 1870. Through the kindness of our friend, Dr. S. J. Jones, who was present at the meeting, we have been furnished with full reports of each day's proceedings, and abstracts of the various papers presented to the Sections.

The sessions were continued four days. The papers prepared for the Sections numbered more than fifty; some of which were highly important.

Mr. Furneaux Jordan, presented a paper on the "Treatment of Enlarged Lymphatic Glands," in which he advocated strongly the maintainence of counter-irritation, not over, but in the vicinity of the gland affected. For instance, in enlarged glands of the neck, he makes decided counter-irritation with iodine over the back of the neck, extending it to a line a little below the diseased glands. He also recommends pressure with *shot-bags* on the tumors, as much as the patient can bear in a recumbent position, for a little while each day. By these means he claims unusual success in the treatment of this class of troublesome ailments.

M. Teevan, read a paper on "Spermatorrhœa," in which he made an important distinction between true Spermatorrhœa, and involuntary nocturnal emissions. The former was characterized by the unconscious passage of the Spermatozoa in the urine, and was almost always accompanied by a loss of sexual desire, and resulted from habits of debauchery, indigestion, and local irritants. The pathological condition is one of loss of sensibility, and consequent relaxation of the seminal ducts, and is most likely to be relieved by good hygienic regulations, chalybiate tonics, strychnine, and electricity. Sometimes the application of nitrate of silver to the orifices of the seminal ducts, is useful; but bromide of potassa and other nervous sedatives are worse than useless. On the other hand, the usual nocturnal seminal emissions depend on a morbid excitability of the sexual organs, with excessive sexual desire, in most cases.

Such cases are much more likely to be relieved by free, habitual, muscular exercise, plain diet, and pretty full doses of the bromide of potassa taken at bedtime. In the first variety, continence or entire abstinence from sexual intercourse is regarded by M. Teevan as essential to recovery. Our space in the present issue will not permit us to notice more of the interesting papers read in the several sections.

The general meetings of the Association, which were held a part of each day, were occupied mostly with the subject of medical education and examinations.

The British Medical Association appears to be occupied in the same work for which our own national organization was instituted. The great central evil of the system of medical education in Great Britain, and the remedy, are very clearly stated by the President, Dr. Charlton, in his opening address. He says, "Although the deficiencies of medical education, and the condition of the medical practitioner, had long before been discussed in our journals, and been set forth in language sharp and incisive as that of Junius, still it is only within the last two decades, that the whole profession, tired of calling upon Jupiter, has unanimously put shoulder to the wheel, and moved with one accord to remedy our wrongs. United by its able journal, united still more by the cordiality engendered at these annual meetings, the British Medical Association has pushed forward in the path of medical education, and the general regulation of the profession; and, now that final struggle for a good standard of medical education is finally before us. Hitherto the paramount obstacle to progress has been the multiplicity of sources from whence licenses to practice medicine have been derived. No uniform standard of education could be kept up amid these jarring interests. The well-meant endeavors of the Medical Council, by sending out examiners to visit the different universities and corporations, was no guarantee for permanent improvement; these bodies were ever competing for licentiates, and were exposed to the deadly temptation of lowering their standards of education to attract more graduates. Against this crying evil, there was but one remedy — a single gate by which all should enter the profession; a single but searching examination for the license to practice." The evil of having a score of institutions, each granting diplomas or licenses to practice, and each pecuniarily interested in increasing

the number of its graduates, appears to be clearly appreciated by a large majority of our British brethren. And we are glad to see that their Association contends firmly and vigorously for the only efficient remedy; namely, the formation of a single, independent board of examiners. Their position, with any argument brought to sustain it, applies with even greater force to the condition of things in our own country. So long as we have thirty or forty colleges or schools, issuing diplomas which are recognized as licenses to practice, so long will the competition for larger classes, entirely prevent the adoption and maintainence of a proper standard of attainments, either preliminary or medical.

We were fully satisfied with the correctness of this position nearly thirty years since, when discussing the subject in the Medical Society of the State of New York. And all our observations in the American Medical Association, and in the Conventions of Delegates from Medical Colleges, have only served to strengthen our convictions.

All admit that we ought to have a higher standard of preliminary requirements before young men are permitted to enter upon the study of medicine. All equally admit that the method of pursuing medical studies in the schools (with one or two exceptions) is destitute of any consecutive order, too limited in time, and in many instances too limited in facilities for clinical observation. Yet so potent and universal is the idea that a large part of the students of medicine will attend such schools as will give them a diploma in the shortest time, and with the least attention to either literary or professional qualifications, that the schools of no one city dare to add a month to the length of their lecture term, or exact any adequate preliminary qualifications, &c., lest the schools of neighboring cities should reap advantages by keeping their time and requirements less. It is thus that the union of the teaching and licensing in the same institution, operates as a constant and almost insuperable barrier to any noted improvement in the education of the profession. The sooner the profession, both in England and America, devise a method by which admission into the ranks of the profession shall depend on a full examination by independent boards, leaving the schools to compete with each other solely on the basis of their merits as teaching bodies, the sooner will the great evils and defects in medical education be remedied.

Opening of the Medical Colleges.—An unexpected delay of a few days in the issuing of this number of the *Examiner*, enables us to add a few words in regard to the opening of the Medical Colleges in this city. The Rush Medical College opened its session on the evening of the 28th of September, with an introductory from Prof. Morse on the Mind. The Lecture-room was well filled, and the number of students in attendance nearly the same as at the opening of former sessions.

The Chicago Medical College opened its Twelfth Annual Course of Instruction in its new building, on the corner of Prairie Avenue and Twenty-Sixth Street, on the evening of October 3d. The spacious Lecture-room was well filled with an audience of gentlemen and ladies, in addition to the students. The introductory lecture was delivered by Prof. H. A. Johnson, and as the completion of the new building, with the permanent connection of the institution with the Mercy Hospital on the one hand, and the Northwestern University on the other, marked an era in the progress of the College, the lecture was largely historical. It was listened to with marked attention, and we hope to give it to our readers in full in the next number of the *Examiner*. The number of matriculants in the College, at the opening, was nearly double the number that had been registered at the opening last year.

The Woman's Hospital Medical College opened its first College Term on the evening of the 4th inst. The exercises were held in the Clark Street Methodist Church. The introductory lecture was delivered by Prof. W. H. Byford, and was listened to by a large audience. What the prospects are for a class we do not know.

Strychnine as an Antidote for Chloral Poisoning.—At a meeting of the Berlin Medical Society, in November, 1869, Dr. Liebreich communicated the result of his experiments in search of an antidote for chloral poisoning.

His investigations have not been directed to the discovery of a neutralizing agent for chloral while it remains in the aliment-

ary canal, but after it had entered the circulation. The primary action of chloral being upon the brain and spinal cord, and its secondary upon the heart, he had sought for a remedy which had its immediate effect upon the latter organ.

It occurred to him that strychnine might meet this indication, which increased the force of the systole and lessened that of the diastole, the reverse effect of chloral. Experiments upon animals had confirmed its antidotal properties; its efficacy, however, being restricted to the profounder states of chloral asphyxia.

If merely hypnotic doses of chloral be given to an animal, the administration of strychnine will induce the usual tetanic phenomena. This does not occur where the dose of chloral has been sufficient to affect the function of the spinal cord.

The fact was shown by the following experiments: A fatal dose of chloral was given to a rabbit, and death shortly ensued. The same quantity was given to a second, but as the respiration began to flag, a fatal dose of strychnine was injected (hypodermically). It soon roused from stupor, and perfectly recovered. Two days afterward the same quantity of strychnine was again given, and death occurred in fifteen minutes. He therefore advises its use where the life of the individual is threatened from over-doses of chloral, at the same time employing the ordinary irritants and excitants.

During the discussion which followed the reading of the report, Dr. Von Langenbeck suggested that it would be difficult to determine the quantity of strychnine to be used subcutaneously in asphyxiated states from either chloroform or chloral.

Dr. L., from his experiments on animals, estimates the dose at about 10 milligr. for adult individuals.—*Memorabile Heilbronn, March, 1870.*

Reproductions of Limbs.—M. Philippeaux has proved for fish what he already demonstrated in the case of newts, *viz.*, that when the limb is removed below the scapula or ilium, it is reproduced. But when the scapula or ilium is removed, no reproduction takes place.—*Monthly Microscopical Journal.*

SOME CORRECTIONS.

ZANESVILLE, OHIO, *September 6, 1870.*

PROF. DAVIS:—For the general accuracy of statement in your review of my fasciculus on "The Bromides," please accept my thanks; but you have fallen, inadvertently, no doubt, into several errors, which please allow me to correct.

You state that I am carrying out the train of thought in my published papers prominently enunciated by Prof. Huxley. This is a mistake, both of fact and chronology. My classification of therapeutic agents, based on the repair and waste of the tissues was first announced in a critical study of "Alcohol, as Viewed by the Eye of Science;" communicated, as a valedictory, to the Muskingum County Medical Society, May 1, 1867; afterwards published in *The Medical Archives*, St. Louis, June, 1869. The valedictory for 1868, on "How do Medicines Produce their Effects?" was a further elaboration of life from a physical basis, published in the St. Louis *Medical Reporter*, for December 15, 1868. That on "The Bromides," was read as a valedictory, May 5, 1869, and published, as you state, in the New York *Medical Journal*, for July, 1870.

Prof. Huxley's lecture on "Protoplasm," or "Physical Basis of Life," was delivered in Edinburgh, November 18, 1868; and was first published in London, in *The Fortnightly Review*, for February, 1869. Near the close of April, 1869, and just before the memoir on "The Bromides" was delivered, I saw a notice of Prof. H.'s lecture in *The Book Buyer*, in Mr. Welford's London letter. Though it had already appeared in *Every Saturday*, in Boston, I did not know it for several months after. An abridgment of it first met my eye in *Appleton's Journal*, May 15, 1869, ten days after the paper had been read to the Society. The words, or sentence, physical basis of life, as used in it, are in a wholly different sense from that in which Prof. H. uses them in his lecture.

I have no desire to detract anything from the well-earned laurels of Prof. H.; but truth compels me to say I derived

* *Chicago Medical Examiner*, September, 1870, p. 584.

no aid from any of his published papers, and I never saw or corresponded with him; and, if I understand him, he regards what we call "life," as a property of matter, which is certainly not the teaching of any of my published papers, as the diagram in that on "The Bromides" demonstrates.

Placing me, therefore, as a follower of Prof. Huxley is a mistake of fact, and, as I here show you, the identical views contained in my paper on "The Bromides" were published in this country nearly a year before the delivery of his lecture on "Protoplasm," in Edinburgh.

Again, you state that my conclusion is that the bromides are applicable "to the treatment of such cases only as are accompanied by the retention of '*surplus material.*'" My statement was the retention of *effete matter*, between which and a mere surplus, there is just the difference between life and death, no more and no less.

A future exact science of life and therapeutics must grow out of what we call physical science, and no basis of therapeutics can be more simple or exact than one based on the supply and waste of the tissues, as it is in them, force is, so to speak, stored up. Nor can any basis of physiology be more exact and simple than that which bases normal function on normal forms, and molecular changes in the material of the forms of the tissues; nor of pathology, or loss of form, or increase or decrease of the velocity of molecular changes in the material of forms; seeing that these are the absolutely naked scientific conditions of life.

Whatever may be my merits or demerits in this connection, they must rest on the practical application of physical and chemical law in actual clinical medicine, and from several year's experience, I find it so much simpler, as well as so much more certain, it must be nearer right than that now in use by the profession.

I hope, before the close of the year, to submit you a report of a clinical case, managed in accordance with life from a physical basis, and therapeutics from supply or repair and waste of the tissues, for insertion in *The Examiner*. Very truly yours,

Z. C. McELROY.

THE STETHO-SPHYGMOGRAPH. BY T. HAWKSLEY, M.D., M. R.C.P.—At a meeting of the Medical Society of London, on Nov. 8th, Dr. Hawksley read a paper on the "Stetho-Sphygmograph," as an aid to the physiological and pathological investigation of the functions of respiration and circulation. He exhibited the practical application of the instrument on a case of phthisis pulmonalis, and one of well-marked mitral regurgitation. In every case three simultaneous and synchronous tracings of moving organs are taken—as, for example, the two lungs and the radial pulse; or the heart, the radial pulse, the carotid, or the femoral. It was shown that the tracings would show any disparity in the action of the two lungs, also the relation of inspiration to expiration; and, associated with the pulse tracing, it afforded the opportunity of observing, not only the peculiarities or modifications of the circulation, as in the case of Marey's sphygmograph, but in addition, their relation to the respiratory process. By aid of this instrument, any question as to relative time in the transmission of the blood-wave through the arteries may be solved; as, for example, the time occupied in transmission to the radial, the carotid, or the femoral artery. This may be found to have important connection with the diagnosis of aneurisms and tumors, as well as with diseased states of the arteries with chronic diseases of organs.—*Lond. Lancet.*

CHLOROFORM IN THE TREATMENT OF BILIARY CALCULI. By JOHN BARCLAY, M.D., Physician to the Infirmary, Leicester.—Seeing some reference in a contemporary periodical to the proposed use of chloral as a solvent of biliary calculi, I crave space to state that I have met with very great success from the internal administration of chloroform in that disease.

I first used it in 1861, in the case of a clergyman, aged 58. He had suffered for twenty-three years from gall-stones; the peculiar pain, jaundice, with subsequent discharge, by stool, of the calculi, coming on so suddenly and without warning, as seriously and frequently to interfere with his duties. Just then, writing on alcohol, I had been studying the experiments of Lallemand and others on the existence of alcohol unchanged in the blood. Knowing that ethers are solvents of cholesterine, I ventured, on his third attack in that year, to prescribe chloroform in doses of two or three drops, three or four times a day, on the chance of its reaching the calculi through the blood. To his surprise and my gratification, pain, tenderness, distention and jaundice disappeared together, and in the eight years since elapsed, he has never had another attack. He keeps a bottle

of "chloric ether" by him, for occasional use. I have found it to give invariable and permanent relief in many instances since.

The theory of thus dissolving the calculi *in situ*, followed by the disappearance of the symptoms, leads to a deduction that may be legitimate, that relief was obtained by their being so dissolved.—*British Medical Journal.*

A NEW VESICANT.—In a recent number of the *Journal de Chimie Medicale*, M. Delpech calls attention to the defects of the ordinary preparations of cantharides; the proportion of the active agent, or cantharidin, varying, the presence of fatty or oily substances sometimes causing the absorption of a dangerous poison, and the rosin or turpentine employed in the composition of the plaster being an unnecessary irritant. In place of this, he recommends the cantharidinate of potash, which is of a very stable composition, has no odor, and possesses a vesicant action in a high degree. He recommends as the best formula for the plaster:—Gelatin, 2.09 parts; water, 10 parts; alcohol, 10 parts; cantharidinate of potash, 0.20 part; glycerine, 9.5 parts. The mass should be equally spread on thin gutta percha, a definite quantity being present in each square inch.—*Lancet.*

THE VALUE OF AMERICAN HEMP.—Dr. H. C. Wood, Jr. has written an essay which he read before the Amer. Phil. Society, in which he records some experiments with an article of hemp grown in Kentucky. He took an alcoholic extract made from the dried leaves, swallowing at a dose nearly all the product of an ounce and a-half of the leaves, with the effect of profound hemp intoxication. It proved to be toxic in its power, although he recovered himself in a day or two. He had all the exuberant hilarity usually experienced from the hemp, followed by a feeling of fear of impending death; this took so deep a hold on him that it was impossible to shake it off.

Other trials he has made with it convince him that it has more power than that brought from India, on one occasion four times the dose of the latter failing to produce the effect of the Kentucky specimen.

He has his extract made from a tincture, removing certain inert matters by an alkali; he intimates the hope that in the present revision of the U. S. Pharmacopœia the *ex cannibis purifactum* may be replaced by a preparation to be called *Resena cannibis*, and to be made by precipitating the concentrated tincture by water rendered strongly alkaline by soda of potash.

The native plant if used will always be more reliable than the imported, from the certainty of freshness, while the cost of it is hardly anything.

Mortality for the Month of August, 1870.

Accidents, by chloroform	1	Diabetes Mellitus	1	Liver, organic disease & dropsy of	1
" solution of potash	1	Diarrhœa	55	Lungs, congestion	5
" shooting	1	" chronic	10	Measles	2
" by team	1	" & complications	11	" & complications	2
" drowned	11	Diphtheria	17	Metro peritonits	1
" by fall	3	Dropsy	2	" & puerperal	3
" railroad	4	Dysentery	40	Meningitis	7
Anasarca	1	" & paralysis	1	" & erysipelas	1
Aphthæ	2	" acute	1	" cerebro-spinal	4
Apoplexy	1	" chronic	4	" tubercular	5
Abscesses scrofulous	1	" typhoid	6	Meritis & overitis	1
Anæmia	1	Entero-colitis	6	Old age	11
Aortic valves, ossification of and hypertrophy of heart	1	Enteritis	15	" and dropsy	1
Births, premature	7	Exhaustion following ligation of artery	1	Paralysis	4
Births still	46	Fever, congestive	3	Peritonitis	6
Bowels, ulceration of	1	" puerperal,	5	Pneumonia	11
Brain, congestion	10	" remittent	4	" bronche	1
" inflammation	18	" scarlet	16	" typhoid	2
" effusion on	1	" " complications	3	Pyæmia	2
" softening	1	" " malignant	2	Scrofula	1
" and hemiplegia	1	" typhoid	38	Small-Pox	1
Bronchitis	8	" typhus	2	Spine, paralysis	1
" capillary	1	Gastro-Enteritis	6	Stomatitis	1
Cancer of liver	1	Heart, disease of & albuminuria	1	Stomach, traumatic inflammation	1
" orbit	1	" dropsy of	1	Suicide by arsenic	1
" pylorus	1	" valvular disease	4	" " laudan'm	1
" rectum	1	Hepatitis, chronic	2	" " morphine	1
" tongue	1	Hip disease	1	" " shooting	1
" stomach	3	Hydrocephalus	23	Tabes mesenterica	51
" " uterus	2	" acute	6	Teething	26
Cholera Infantum	277	" chronic	1	" & complications	20
" morbus	6	Hydro-peritonium	1	Throat, malig't sore	1
Consumption	44	Inanition	25	Trismus	2
Convulsions	82	Intemperance	2	Uterus, inflammation	1
Croup	10	Icterus	1	Urethra, stricture	1
" membranous	3	Kidneys, Bright's disease	2	" rupture of & extravagasation of urine	1
Cynanche tonsillaris	2	" organic disease of & dropsy	1	Whooping-cough	14
Development deficient abdomem	1	" & liver tuberculosis	1	Total	1033
Debility, general	9	Laryngitis	1		
Delirium Tremens	1				

COMPARISON.

Deaths in Aug., 1870, 1033 | Deaths in Aug. 1869, 1072 | Decrease, 39
Deaths in July, 1870, 1120 | Decrease, 87

AGES.

Under 1	471	10 to 20	30	70 to 80	15
1 to 2	223	20 to 30	75	80 to 90	3
2 to 3	44	30 to 40	46	Unknown,	1
3 to 4	22	40 to 50	40		
4 to 5	9	50 to 60	24	Total,	1033
5 to 10	21	60 to 70	9		

Males, 547	Females, 486	Total, 1033
Single, 885	Married 148	Total, 1033
White, 1022	Colored, 11	Total, 1033

NATIVITY.

Atlantic Ocean	1	England	20	Nova Scotia	1
Bohemia	9	France	1	Switzerland	1
Canada	2	Germany	75	Scotland,	7
Chicago, Native	144	Holland	4	Sweden	7
Chicago, Foreign	577	Ireland	62	Unknown	4
U. S., other parts	99	Isle of Jersey	1		
Denmark	1	Norway	17	Total,	1033

MORTALITY BY WARDS FOR THE MONTH.

Wards.	Mortality.	Wards.	Mortality.
1	11	18	70
2	20	19	17
3	36	20	23
4	18	Accidents	22
5	35	County Hospital	15
6	92	Convent Good Shepherd	1
7	81	Home for Friendless	5
8	91	Hospital Alexian Brothers	6
9	82	Immigrants	17
10	17	Mercy Hospital	7
11	34	Erring Woman's Refuge,	1
12	35	Protestant Orphan Asylum	3
13	20	St. Joseph Orphan Asylum	10
14	25	Suicide	4
15	98		
16	62	Total,	1033
17	75		

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